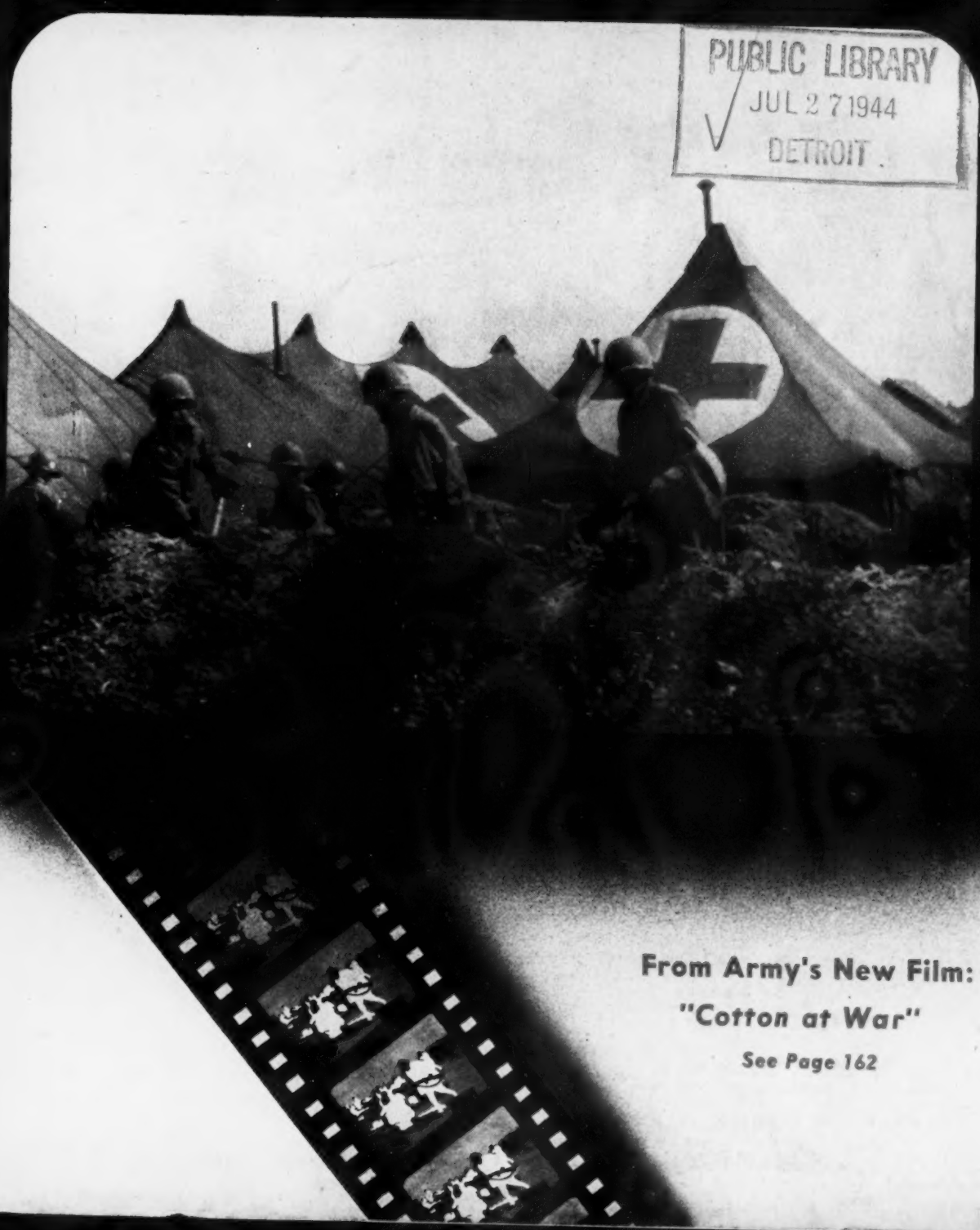
TECHNOLOGY DEPT.

TEXTILE WORLD

JULY • 1944



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From Army's New Film:

"Cotton at War"

See Page 162

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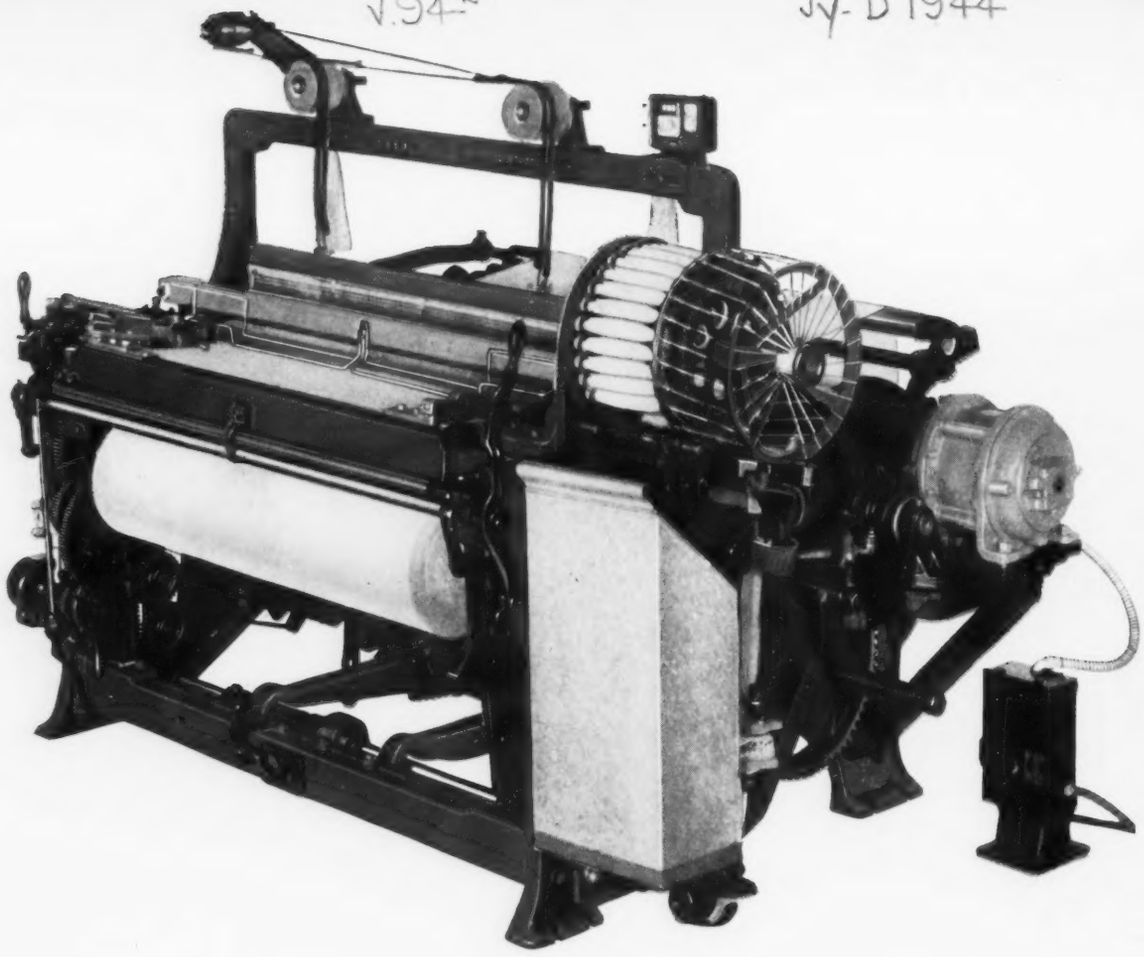

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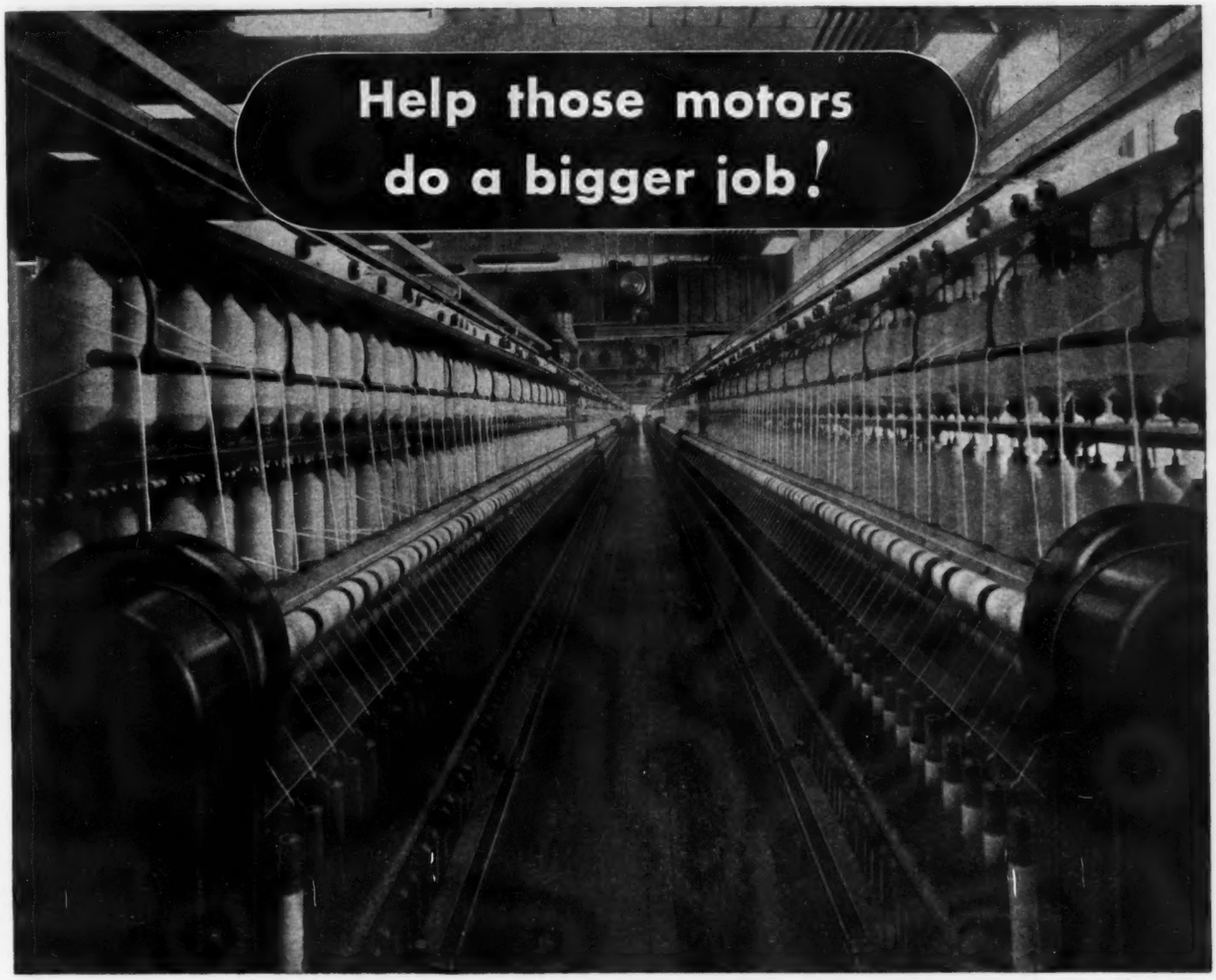

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WHEREVER shafts turn in the textile industry . . . in all the dozens of types of machines through which fibres pass . . . ball bearings are proving of tremendous value as power savers.

Often they end the need of an oversize motor, or permit the same-size motor to do a bigger job.

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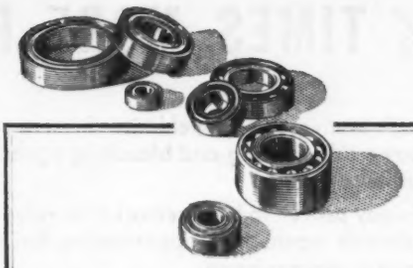

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$$\underset{\text{sodium chlorite}}{2\ NaClO_2} + \underset{\text{chlorine}}{Cl_2} \longrightarrow \underset{\text{chlorine dioxide}}{2\ ClO_2} + \underset{\text{salt}}{2\ NaCl}$$

Our technical service department will be glad to furnish information on the use of chlorine dioxide in your particular operations.

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TEXTILE WORLD

JULY 1944 — VOLUME 94 NUMBER 7

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Editorial

Birth of a NEW INDUSTRY

THE REMARKS by Col. Frank M. Steadman on the part which the Quartermaster Corps has played in promoting statistical quality control (page 63) remind us that war always contributes to progress in manufacturing methods. In the case of textiles, the present war has introduced not only a step forward in quality control but also an improved understanding of the methods of training operatives and operating executives and a better knowledge of how to develop utility properties in fabrics, including shrink-resistance in wool goods, mildew-proofing and water-repellency in cotton goods, and so on. In the postwar era, the industry may discover that it has benefited from the war even more than it now realizes, when it finds its machinery more precision built, constructed of lighter metals, and perhaps incorporating some interesting applications of electronics.

Yes, war contributes; but there is a certain steady progress in the industry which a man who spends his life closely associated with its day-to-day problems fails to see, just as a parent fails to note the steady progress of his children, until he runs across an old photograph. To a man who takes a five-year leave of absence from the industry and then returns to it, the changes under way appear profound.

An editor who takes such leave finds upon his return that his readers are on the average better informed and more receptive to the adoption of precision and scientific methods. He finds more highly trained men in charge of quality control, of research, and of product development; and he finds the men of scientific mind more respected and assigned greater responsibility in the operation of the mills.

Some evidence of these advances will be found in an article on the subject of cotton-fiber control, beginning on page 58 of this issue. The methods described would have proved mysterious and confusing if sprung on the average mill man of a generation ago, but today they are accepted and well-established procedures in some of the more progressive mills, and their adoption is spreading rapidly.

IT IS INTERESTING to note that these long-needed scientific procedures are applied to the control of one of the natural fibers—and this at a time when the advent of remarkably satisfactory synthetic fibers is playing a major role in transforming the textile industry to a precision industry. While, as Robert Amory explained to the American Association of Textile Technologists last month, the so-called natural fibers are not entirely natural, because certain desirable textile properties have been developed in them through careful cultivation and breeding, the fact remains that, for thousands of years before rayon arrived, the spinner leaned heavily on nature for the production of his raw materials. His cotton varied with the amount of sun and rain. His wool varied with the amount of food the sheep found to eat. Rayon in the early days—twenty years and more ago—was variable enough, as those of us who dealt with it then can well testify; but through the years the synthetics producers have learned how to control its uniformity, how to maintain and improve its best qualities, and how to produce new synthetics with better properties.

Furthermore, we are just at the beginning. New and better fibers are in the test tubes, and the synthetics of the future will certainly cut greater inroads into the spheres of the natural fibers. Even today, many synthetics are superior to natural fibers in certain important properties, including fineness, strength, elasticity, and cleanliness.

WHAT, IN THE MAIN, does the synthetic raw material lack? What keeps it from making the same progress in the staple-fiber field that it has made in the continuous-filament field? Primarily, it is lack of adequate spinnability, that property which enables fibers to cling together in a yarn. But, given time, the synthetics producers will be able to develop a flattened, twisted, hollow tube, or a fiber with a permanent curl, or perhaps a fiber with some other basis for spinnability which is even superior to that of cotton or wool.

And so textiles, more and more freed of the handicap of a variable raw material, move on at a constantly accelerating rate toward the faster and more efficient production of more highly serviceable fabrics. To a degree, the entire industry is being reborn as a new industry; and, as in the case of other new industries, its early, youthful years will be exciting, stimulating, and mayhap glamorous. It will be a grand industry to watch and, better yet, to play a part in.

Edwin D. Fowle

RIGHT ON THE *Beam*

EVERY end from every spool on the creel is hurrying to its appointed place on the warping beam, to help speed the textile industry's mighty part in the war effort.

"Right on the beam", too, is the highly specialized loom lubricant that stays on the loom and off the yarn . . . *Texaco Stazon.*

Texaco Stazon assures efficient lubrication with minimum spoilage of yarn or fabric due to oil stain. It stays on fast-moving cranks, etc., withstanding load shocks without splattering, creeping, dripping. Its high stability prevents excessive formation of non-lubricating deposits in bearings or enclosed housings. For loom cams, use *Texaco 919 Lubricant S.*

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FOR THE TEXTILE INDUSTRY

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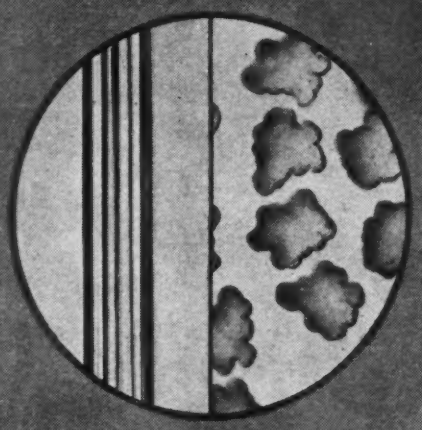

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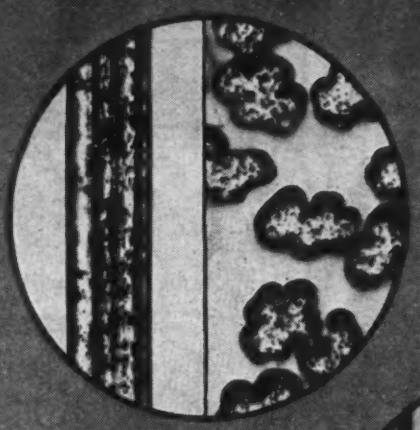

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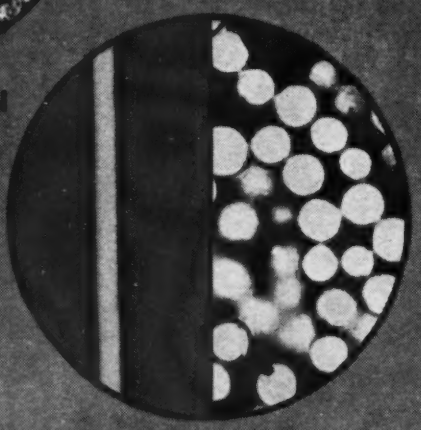

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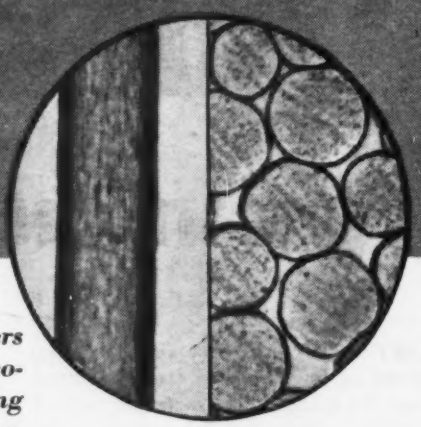

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OUR *Experience* WITH THESE AND OTHER SYNTHETICS CAN HELP YOU

Avoid Costly Experiments

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The yarns and fabrics made from these and other synthetic fibers will be used in increasingly greater amounts after the war. Saco-Lowell engineers can help you now in planning and developing the proper organization for the efficient processing of these fibers.

Saco-Lowell **has designed the specialized equipment necessary to blend, prepare and spin many of these fibers in simple or complex combinations. Since the number of blends which can be made from these new fibers is almost unlimited, Saco-Lowell machinery has been built with a flexibility which makes it possible to make good yarn from any of these synthetics. ¶At present we can only *tell* you about the things we have been doing . . . and urge you to make plans for tomorrow. If you are planning to enter this new and rapidly growing field, our engineers can be of great assistance to you *now* in helping you select the proper organization and equipment.**

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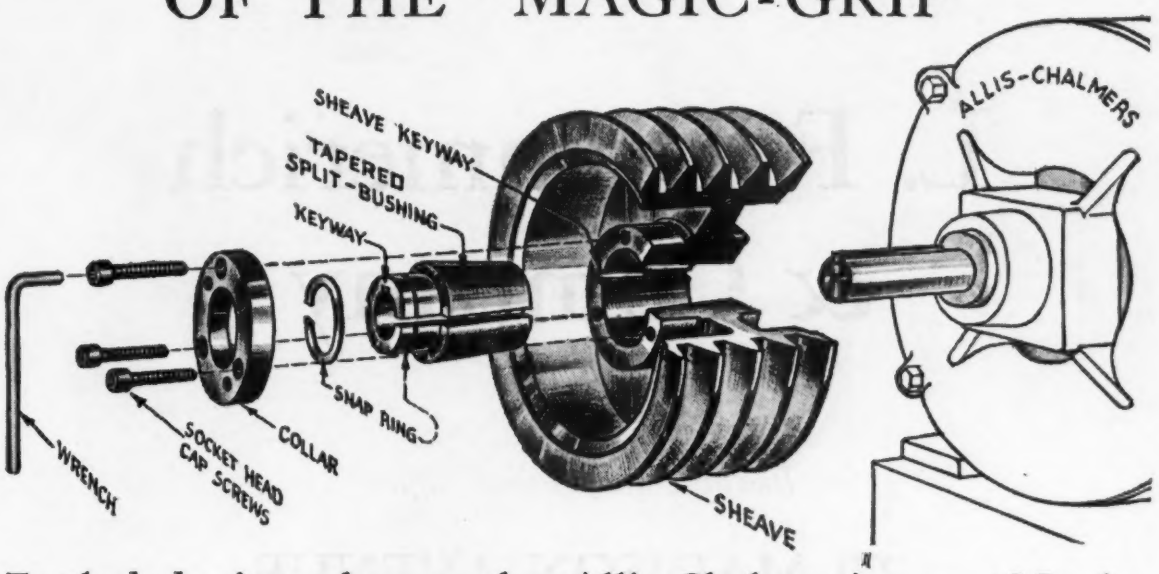
Here's the Secret

OF THE "MAGIC-GRIP"



Exploded view shows why Allis-Chalmers' new "Magic-Grip" Sheave goes on *as a unit in 3 easy steps.* It's the fastest mounting sheave on the market—at no extra cost.

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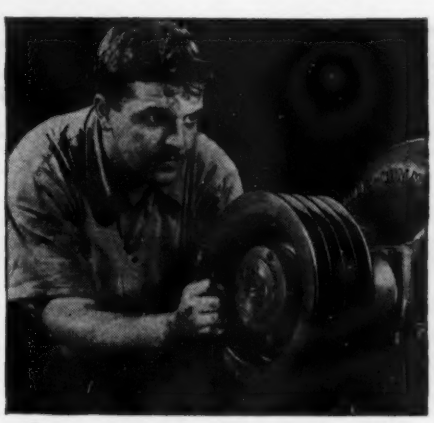

2 Slide to desired position. Sliding easily, sheave can be placed *exactly* according to straight-edge . . . giving you true alignment with resulting smooth performance. A minimum of time is required.

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SANDOZ PRESENTS *The color achievement of the month*

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Sandoz congratulates the Cashmere Corporation of America, makers of Hadley Knitwear, for adding another fine sweater to America's informal wardrobe, for sports, cool summer evenings or winter twilights.

Subtle colors like Sandoz' Alizarine Light Violet 2RC and Brilliant Alizarine Light Violet FFR (Pat.) are contributing widely to the production of these fashionable shades on worsteds and woolens. Both colors have proved exceptionally fast-to-light.

In "thinking ahead with textiles", Sandoz has also developed certain Blues which, above all others, combine fastness to light *and* fulling. Brilliant Alizarine Milling Blues, BL, G and SL, will identify these colors on your order, should you wish to investigate these distinctive products of Sandoz' Research.

To assist you in filling your needs accurately, for a wide range of acid, chrome and direct dyes as well as auxiliary chemicals for all natural and synthetic fibres, Sandoz application laboratories are in New York, Boston, Philadelphia, Charlotte, Los Angeles and Toronto; stocks are carried in those cities. Other Sandoz branches: in Chicago, Paterson and Providence.

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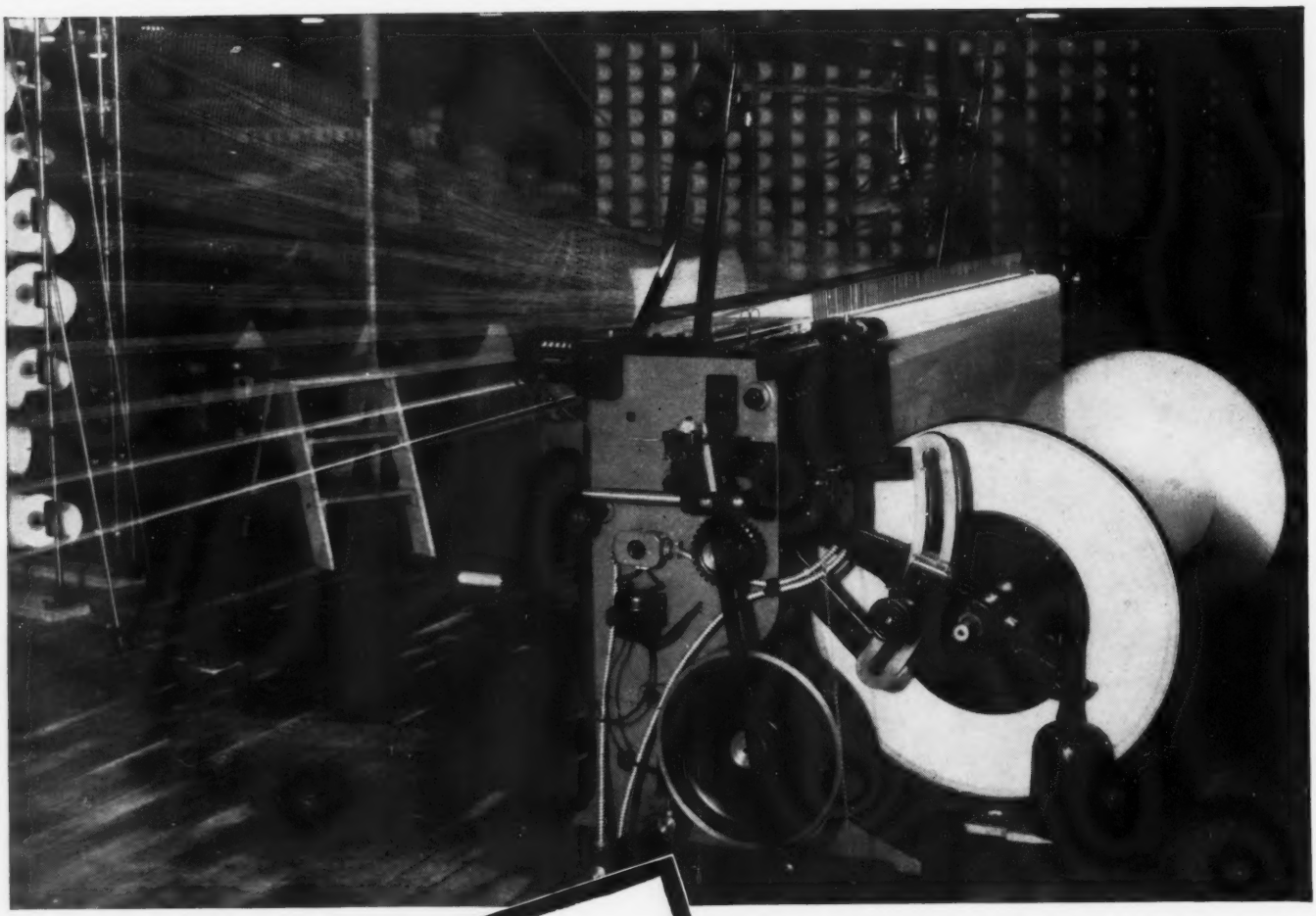
SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SANDOZ *thinks ahead with textiles*

SANDOZ



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It means steady, smooth performance year in and year out—low warping, weaving and slashing costs.

In the conversion of cotton to fabric for vital war needs, Performance is the thing that counts. 5627

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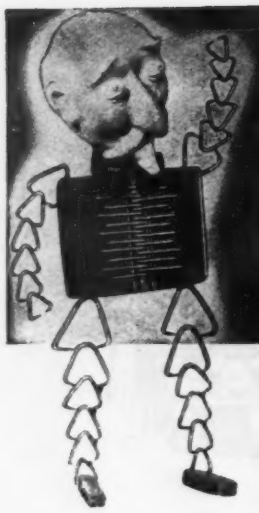


SAVE 30% ON YOUR BELT LACING COSTS

The Timken Roller Bearing Co. of Canton, Ohio, has effected a saving of about 30% in consumption of belt hooks by using Clipper Belt Hooks, Clipper Lubrihide Pins and Clipper Speed Lacers.

You, too, can make worth-while savings by using ALL THREE Clipper products.

Remember, only Clipper Belt Hooks are packed with the long wearing **Lubrihide Pins.**

Clipper No. 9 Portable laces belts up to 6 inches wide in one quick, easy operation.

The **Clipper No. 9 Portable Lacer** develops pressures up to 16 tons. With such pressure, hook legs can be embedded flush with the surface of any kind of belt and points clinched.

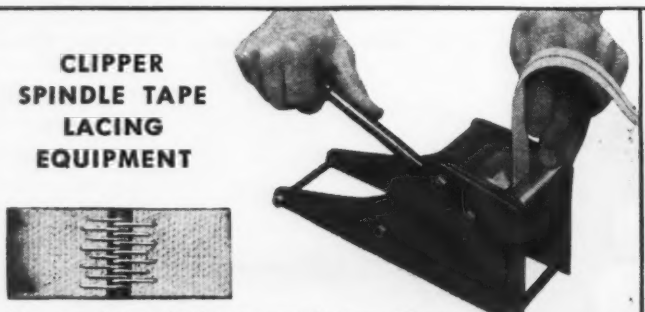
The scientific action of the jaws forms a perfect line of well rounded loops permitting the use of maximum diameter **Lubrihide Pin,** also providing equal distribution of pulling strain on every hook. A belt joint so made will outlast by two to three times one made with an old-style portable lacer.

Scientific action of Jaws forms

a perfect loop for connecting pins.

We suggest that you check YOUR belt lacing situation. Send for folder describing the powerful Clipper No. 9 Portable Lacer and other Clipper products. Phone your Mill Supply Jobber for a demonstration!

CLIPPER SPINDLE TAPE LACING EQUIPMENT



You can lace spindle tapes—10 times faster than stitching — with Clipper No. 25 Spindle Tape Hooks. The spinning frame is shut down only long enough to place the new tape on the pulleys and join the ends with the connecting pin — a short, easy operation. Tapes run true—last longer—run smoother—require less tension. VIBRATION is ELIMINATED.

CLIPPER CONDENSER TAPE LACING EQUIPMENT

Condenser tapes are laced with Clipper No. 25 Condenser Tape Hooks. The joint is as flexible as the tape itself. Clipper Laced Condenser Tapes can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving, and cut to length. WRITE FOR INFORMATION.

CLIPPER BELT LACER COMPANY GRAND RAPIDS, MICHIGAN, U. S. A.

Don't wait for this...

IT CAN'T HAPPEN HERE!

Anything could happen . . . and did . . . in Greek mythology. For the ancients believed in miracles. They thought that Pallas Athene, a valuable goddess wise in the arts of peace and war, brought about her own birth by springing full-armed and in full adult years from the forehead of her father, Zeus.

Today, wishful thinkers still believe in miracles—of the bacon-saving type. They are determined to wait for them to take place . . . without, meanwhile, exercising any thought or muscle. But unfortunately, miracles don't happen in the actual workaday world . . . though many postwar prophets would have it believed that they will come down in cloudbursts as soon as industry returns to the arts of peace.

So here is some plain talk: There will be no sudden postwar miracles in looms, because progress in loom design . . . like all other healthy and sound developments . . . is a matter of steady forward steps and not spasmodic leaps and bounds. There will be, *definitely*, improvements in loom design as C&K's wartime gains in technical knowledge are translated, bit by bit, into terms of more efficient weaving machinery. And those who hold back to wait for completely new looms will lose many advantages as they are made available. For no machine, regardless of type, is ever completely developed. So plan to take progress as it comes, and ride along with it. Don't let the parade pass you by so far that you will be hard put to catch up.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

between Today's War Weapons . . .
and their New Uses in Tomorrow's Looms

U S STARTS HERE TO BUILD YOU *Better* BOBBINS

NO bobbin can be better than the wood from which it is made – and the only way to be *sure* of wood quality is to control it from the source. That's why U S conducts its own selective logging operations, in its own timber holdings.

The maple in U S Bobbins is the finest that grows in northern and western Vermont, long recognized by experts as the best source in the east. U S prime yellow birch, from the same areas, is the superior texture and grade also used in plywood for airplanes and PT boats.

Birch logs are processed before they sour, a condition which shortens the life of the wood without changing its appearance.

In U S sawmills, the best parts of the logs are made into bobbin blanks, and the remainder into lumber. This is the reverse of the procedure often followed by independent roughers.

This close control of raw material makes sure you get long life and trouble-free operation from U S Bobbins. It is one of the many reasons why it pays to consult U S on any question involving Bobbins, Cones, Rolls, Shuttles, Spools, or Tubes.

The "Split-Stock" process makes US Bobbins smoother, stronger, better balanced

Splitting the stock makes sure the bobbin is "centered on the grain" for turning. With sawed stock, cross grain often causes weakness, splintering, unbalance. Specify U S Bobbins for superior performance, longer service life.

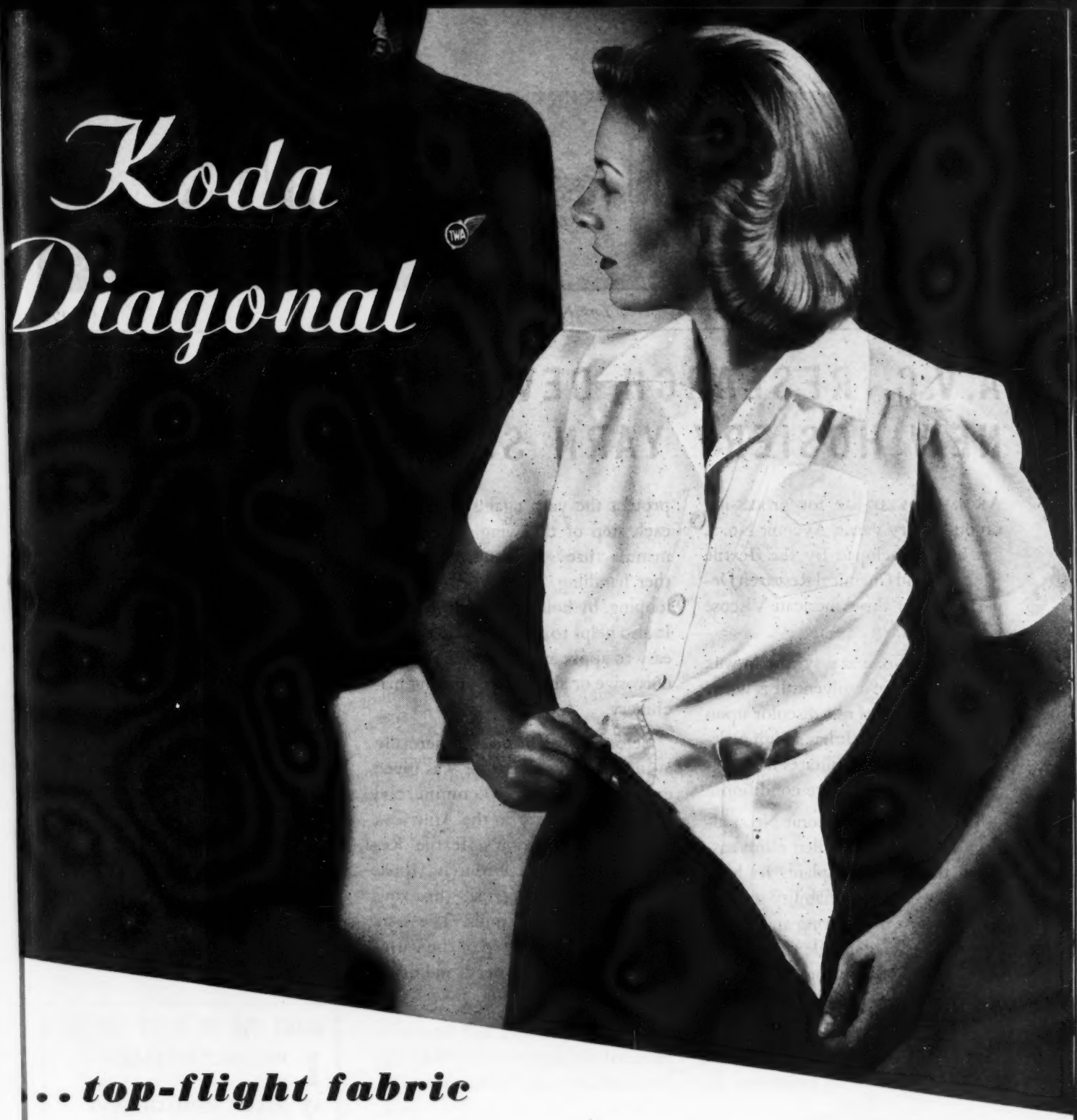
U S BOBBIN & SHUTTLE CO.

PROVIDENCE, R. I.
GREENVILLE, S. C.
CHICAGO AGENT:
Albert R. Breen,
20 E. Jackson Blvd.

LAWRENCE, MASS.
CANADIAN AGENT:
W. J. Westaway
Montreal, Que. — Hamilton, Ont.

JOHNSON CITY, TENN.
CHARLOTTE, N. C.
ALABAMA AGENT:
Young & Vann Supply Co.
Birmingham

THE SEAL OF QUALITY AND SERVICE SINCE 1897 US



. . . top-flight fabric

Two years' flying time with TWA is an impressive service test for a fabric. Koda Diagonal, regulation for the uniform blou-slips of all TWA hostesses, has met this test . . . passed it with honors for "fine wearing quality, easy laundering, a high soil-resistance that makes white practical on duty."

Koda Diagonal's success with the airlines is well matched by its "ground" record, too. It is one of the most satisfactory weaves for nurses' uniforms . . . one of the most popular for tailored blouses.

Only yarn of uniform excellence can build fabrics with records like this one. Koda Diagonal is woven entirely of Koda, Eastman acetate rayon . . . a balanced continuous filament yarn with strength, resiliency and suppleness . . . each cone like the last. For further information about Koda, consult A. M. Tenney Associates, Inc., 10 East 40th Street, New York 16, sales representatives for the Tennessee Eastman Corporation, subsidiary of the Eastman Kodak Company.

EASTMAN ACETATE RAYON

DETROIT PUBLIC LIBRARY

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. JULY, 1944

A.V.C. RESEARCH DEVELOPS NEW HOSIERY YARN SIZE

AN IMPROVED size for processing rayon hosiery yarns, Avconit No. 4, has been developed by the Textile Research and Chemical Research Departments of the American Viscose Corporation.

Avconit No. 4 is a synthetic wax blend applied in a solvent. It is white in color and does not discolor upon repeated heatings. It has a high melting point, which facilitates handling under high temperature conditions.

Tests show that Avconit No. 4 allows yarns to be handled more easily in the throwing plant. Its high degree of self-emulsifiability greatly increases ease of scouring and makes it particularly adaptable to the one-bath method of scouring and dyeing.

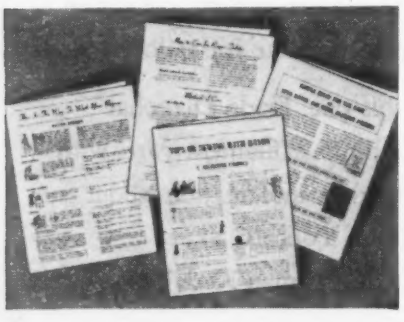
The principal functions performed by Avconit No. 4 are to provide adequate yarn lubrication . . . to hold the yarn twist during knitting . . . to protect the yarn against damage at each step of throwing and hosiery manufacture . . . and to facilitate further handling, such as seaming and looping, by holding the fabric shape. It also helps to form a clear stitch, is easy to apply and remove, and is not corrosive or abrasive to knitting machinery.

Before it was made commercially available, Avconit No. 4 was given exhaustive tests on commercial hosiery machinery in the American Viscose Corporation's Textile Research Department at Marcus Hook, Pa., and in commercial throwing plants and hosiery mills. The tests were made at each step of the yarn's manufacture into hosiery, and on all types of rayon.

The new product will be manufactured and distributed by the Atlas Powder Company, Wilmington, Del.

EDUCATIONAL PROGRAM ON RAYON

The new consumer educational program on rayon, which has been conducted by the American Viscose Corporation, since October 1942, is meeting with excellent response. The over-all purpose of the program is to substitute accurate information for the erroneous ideas that have grown up with rayon.



Under this program, one new leaflet is prepared each month. Its subject is also adapted to a radio script, and a news release for the women's pages of newspapers, complete with mats and photos. This material is sent to radio stations, news syndicates, newspapers, clubs, schools, colleges, various U. S. Government bureaus and the educational departments of retail stores.

Typical topics are "This Is the Way to Wash Your Rayons," "How to Care for Rayon," "Tips on Sewing with Rayon," and "Simple Rules for the Care of Spun Rayon and Wool Blended Fabrics."

The program is entirely non-commercial and is not tied up with any trade-mark promotion. The information is not copyrighted, because the American Viscose Corporation feels that it should be available for general use.

NEW USE FOR VINYON**

"Vinyon" is now being used as packing material in pipe lines carrying the hydrofluoric acid for the manufacture of high-octane gasoline. Vinyon is well suited for this purpose, as for industrial filter cloths, because of its exceptional ability to resist strong acids and alkalies, such as sulphuric, nitric and hydrofluoric acid, aqua regia, caustic soda and potash.

COLLINS LOOM WORKS NOW "AVECO, INC."

The American Viscose Corporation has changed the name of its subsidiary, Collins Loom Works, to Aveco, Inc. This subsidiary, acquired in 1943, is carrying on research and development work on the tricot manufacturing technique.

**T.M.—C.&C.C.C.

MAKE USE OF 4-PLY SERVICE

1 **PRODUCT RESEARCH**
Helps you get the right yarn.

2 **FABRIC DEVELOPMENT**
Helps you design new fabrics.

3 **TEXTILE RESEARCH**
Helps solve production and finishing problems.

4 **"CROWN" TESTED**
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

Producer of
CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

*Reg. U. S. Pat. Off.

Winding Franklin Packages for Dyeing

A 4 IN 1 COLORED YARN SERVICE

IT OFFERS YOU BOTH SPECIALIZED AND GENERAL EXPERIENCE

Franklin Process is a 4 in 1 service because it offers you a choice of 4 yarn dyeing plants but only 1 quality. All plants use the same formulas for standard shades, the same dyeing process and the same yarn suppliers.

Strange to say, each plant is also a specialist and general practitioner in one. When you seek specialized experience, you expect to forego the benefits of general experience. Not so, when you use Franklin Process Service. Each Franklin Process plant specializes to a considerable extent in serving one or more different branches of the textile industry. Yet the experience of any one plant is available to all through our shuttle system, — exchange of information.

OTHER ADVANTAGES OF OUR SERVICE ARE AS FOLLOWS:

1 We can supply yarn as well as dyeing, accepting full responsibility for the finished product.

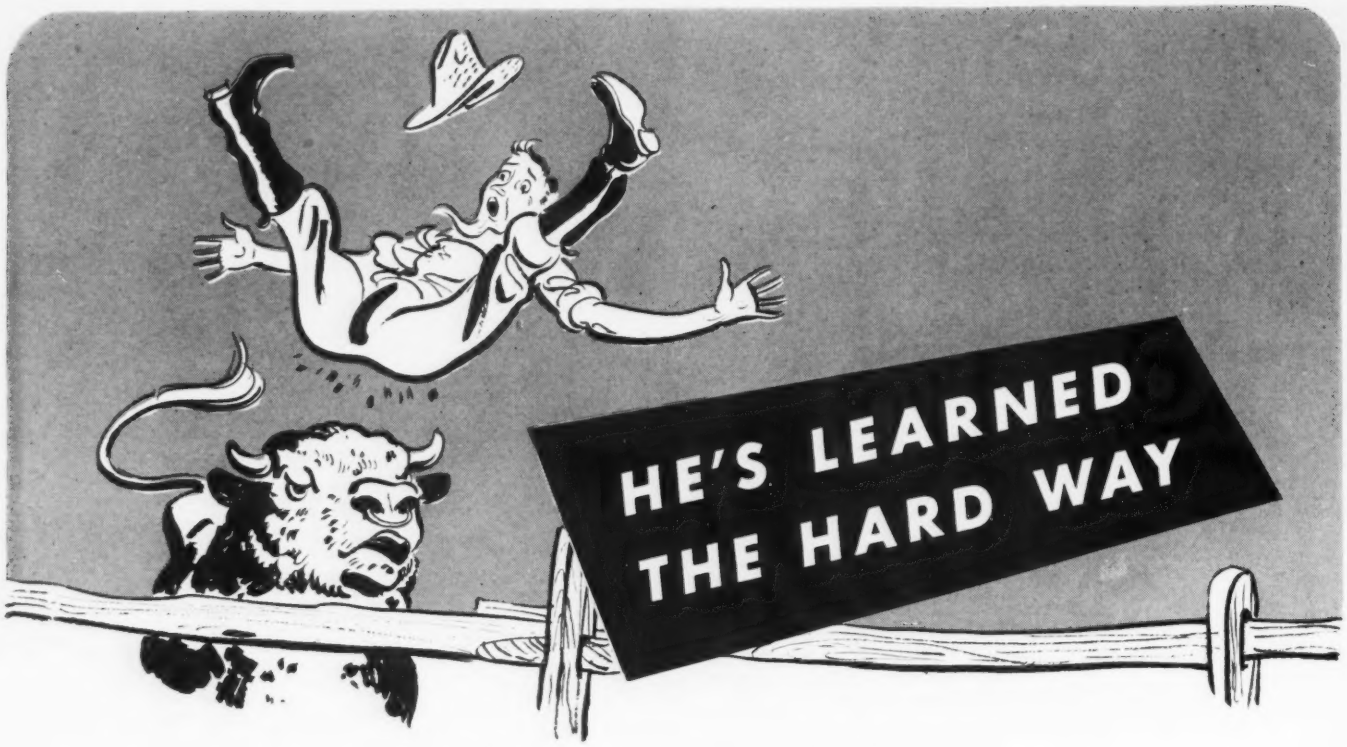
2 We dye by the original Franklin Process which has revolutionized yarn dyeing.

3 We offer not only the largest package dyeing capacity in the world, but also the largest dye batches in the industry; we can handle large or small orders equally well.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

Providence • Philadelphia • Greenville • Chattanooga • New York Representative, 40 Worth St. • Chicago Representative, 100 West Monroe St.



. . . that it's Better to Be Safe Than Sorry!

By making certain that the bull was safely tied BEFORE he entered his pen, the farmer could have saved himself a heap of unnecessary pain. Likewise, by enlisting the aid of Ashworth's practical card men now you can uncover troubles that may cause future card shutdowns.

These men, all members of the Ashworth service staff, will, at your request, make a complete survey of all clothing, chains, bearings and other parts and give you a written report of their findings. Always conservative, Ashworth card men recommend only essential card repairs and these may be budgeted over a period of months if desired.

Using Ashworth products and services means complete card clothing satisfaction. Three factories, six repair shops and seven distribution points give uninterrupted supply, prompt repairs and ready availability.

ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.

FALL RIVER *†‡ WORCESTER *‡ PHILADELPHIA *†‡ CHARLOTTE †‡ GREENVILLE †‡
ATLANTA †‡ DALLAS †‡ (Textile Supply Co.)

**Factory* • *†Repair Shop* • *‡Distributing Point*

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.

Let Just One Frame Prove these things about Dayco Aprons!

DAYCO APRONS

WON'T **stretch, split, crack, distort or groove.**

WON'T **break, flip off, pick lint or curl.**

WON'T **be affected by temperatures or moisture.**

DAYCO APRONS

WILL **last longer than any others.**

WILL **give you better drafting and more uniform yarn.**

WILL **reduce clearer waste.**

The advantages of Dayco Aprons are so outstanding that mills which start with Daycos on only one frame (or even half a frame) soon adopt them as standard.

Dayco aprons are held to a variation of only .004" in thickness and there are no splices. They are non-directional and their drafting qualities remain constant throughout their amazingly long life, delivering yarn of greater uniformity than with any other apron. Correct placing of the famous Daytex Cord as shown in the cross section below, gives them strength enough to support the weight of a man.

Put Dayco Aprons on only one frame as a trial and see how you profit by Dayton Rubber's long experience in the development of synthetic and natural rubber products for the textile industry. Write for complete facts today!

THE DAYTON RUBBER MFG. COMPANY
Famous Dayco Synthetic Rubber Products Since 1934
DAYTON 1, OHIO WAYNESVILLE, N. C.
Main Sales Office . . . Woodside Bldg., Greenville, S. C.
MAINTAIN VICTORY SPEEDS—CONSERVE YOUR TIRES

DAYCO APRONS are an example of the Technical Excellence which characterizes all Dayton Rubber Products for the Textile Industry.

Dayco Aprons by

Dayton Rubber

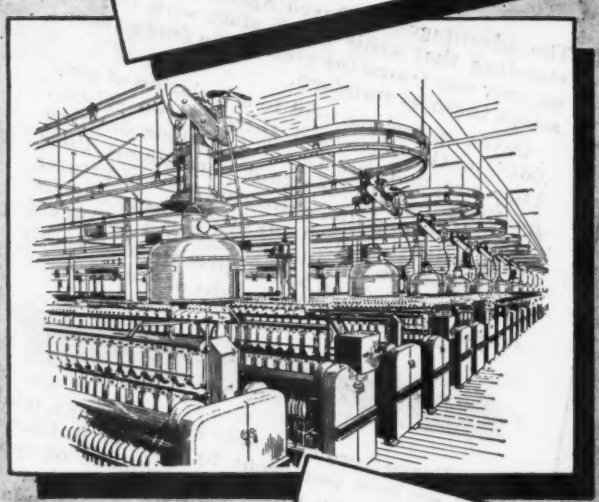
REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

The Mark of Technical Excellence in Synthetic Rubber

AMERICAN MONORAIL

Cyclonic CLEANING...

CLEANS FRAMES AND CEILINGS!



BESIDES its regular job of cleaning spinning, winding, and twisting machines, American MonoRail Automatic Cleaners prevent accumulation of lint on overhead equipment. A 16" high-pitch fan sends a blast of air against the ceiling to keep it clean.

Let an American MonoRail engineer explain the advantages of a systematic removal of lint to replace inefficient hand cleaning. Send for 24-page book on Automatic Cleaners.

THE AMERICAN MONORAIL CO.

13108 ATHENS AVENUE • CLEVELAND 7, OHIO

HOW TO SOLVE *Lubrication Problems*

The First All-Purpose Grease for Plain Bearings!

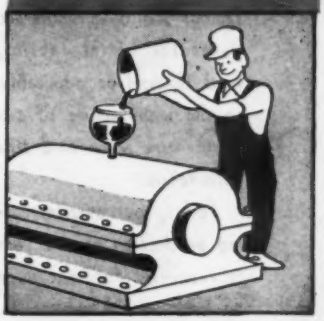
COMBINES BEST FEATURES OF BOTH LIME AND SODA BASE GREASES...
NEW, UNIQUE, PATENTED PRODUCT

STANDS TEMPS. FROM FREEZING TO 350° F.!

STANDS LIGHT TO HEAVY PRESSURES!

STANDS WASHING EVEN BY BOILING WATER!

ALL METHODS OF APPLICATION!



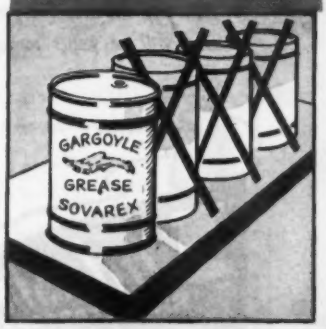
HERE'S THE ALL-PURPOSE GREASE you've been looking for, if you're operating a plant where it's to your advantage to use just one grease.

This great Socony-Vacuum development meets the needs of all plain bearing lubrication as indicated above. It's also suitable for numerous ball and roller bearing applications.

The reason: Gargoyle Grease Sovarex combines the advantages of both lime and soda-base greases. It is resistant to both water and heat and stands up under boiling water. It also resists dilute alkali and acid solutions. It sticks on the job when other greases fail.

See your Socony-Vacuum representative for details on Gargoyle Grease Sovarex.

WHERE PLANTS BENEFIT BY USING ONE GREASE!



GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC. • Standard Oil of N.Y. Div. • White Star Div. • Lubrite Div. • Chicago Div. • White Eagle Div. • Wadhams Div. • Magnolia Petroleum Co. • General Petroleum Corp. of California.

GARGOYLE GREASE SOVAREX

G. I. now — but just wait . .

Wham! and a 30-ton bomber hits the runway at 100 miles an hour! What a beating those huge tires take—and they must take it over and over again.

Hard to believe, for those who think of rayon in terms of dresses and whispy underthings, but inside many of those tires you'll find * TYRON *—a "Continuous Process" rayon especially developed for tire manufacture.*

You see, Industrial's "Continuous Process" machines, that have been making the famous *Spun-lo *textile-size yarns for better fabrics, lend themselves admirably to the manufacture of superior tire yarn and tire cord fabric.*

Today, our ever-increasing production of this yarn is reserved for war uses, to keep our bombers and fighter planes, trucks and jeeps a-rolling on to Victory. Imagine, when yarn of this quality will be available again for civilian uses—what a galaxy of new and superior fabrics and textiles will be yours tomorrow!

Industrial
RAYON CORPORATION
MAKERS OF
Spun-lo RAYON YARN
BY THE

*Reg. U. S. Pat. Off.

CLEVELAND, OHIO • NEW YORK OFFICE, 500 FIFTH AVENUE

FLUE DUST FLAK!

HOW TO ARMOR YOUR FANS AGAINST IT!

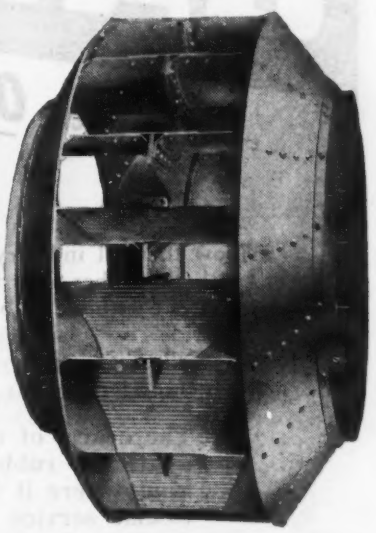
TODAY'S LARGE BOILERS require fans that operate at high speed . . . developing large volumes of air at extreme pressures. And special fan construction is a "must"—if fan rotors are to long survive the exploding *"flak"* barrage of highly abrasive ash which is hurled at whirlwind speeds across the blade faces.

Fan rotors of the type shown at the left are frequently used for low duty. However, for high boiler duty the shape of the blade causes the ash particles to travel at high velocities with maximum abrasive action. Therefore fan outages are frequent occurrances. Repairs are expensive and time consuming—because this type of fan has from 120 to 240 blades per wheel that need replacement.

Delay this action! The Sturtevant Induced Draft Fan utilizes a patented erosion-resistant wheel requiring only from 32 to 48 blades. It has a continuous blade—without a divisional center plate subject to excessive ash erosion. Heavy concentrations of ash from both inlets impinge upon each other—dissapating abrasive action before it can destructively "sand blast" the blades.

For *extra* protection—Sturtevant-designed ribbed wear plates are riveted to the blades. They conform to the blade shape and protect the blade in the paths of greatest flue dust travel. These protective guards are attached to the blades by a series of counter-sunk rivets. They are easily, quickly and inexpensively renewed—minimizing maintenance time, labor and cost. Only the liners are replaced—not the heat-treated alloy steel blades.

HERE'S HOW STURTEVANT ARMORS AGAINST IT



One large public utility used ten of these fans in an exhaustive three year test. So well have they served, this utility has now ordered *30 more*—as the first step in *standardization* on Sturtevant Erosion-Resistant wheels wherever severe operating conditions are encountered.

Sturtevant "Know How" Is Ready To Help Solve Your Conversion Problems

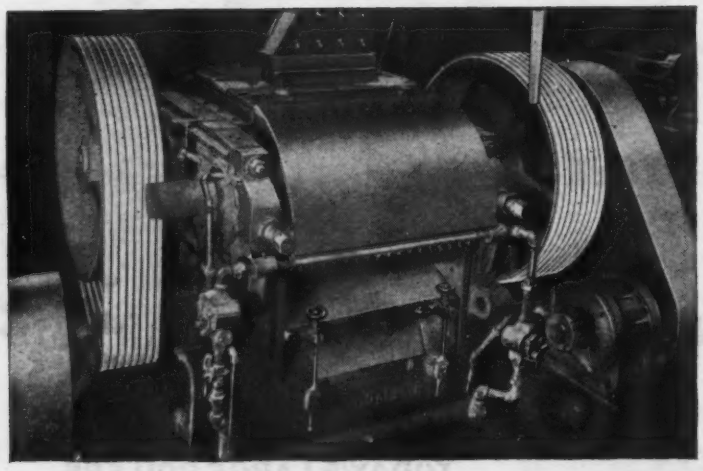
MOST Industrial and Utility Power Plant mechanical draft fans have operated continuously under severe wartime service conditions and now show signs of erosion on the wheel parts . . . blades are getting thinner . . . replacement time is in sight. And, because steel is still critical and delivery uncertain, we suggest you examine your induced draft equipment *now*—and let Sturtevant work with you to make the necessary replacement plans that will avoid costly shut-downs later.

B. F. STURTEVANT COMPANY • *Hyde Park, Boston 36, Mass.*

Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

SYSTEMS and EQUIPMENT
Engineered for Efficiency in

Heating
Ventilating
Air Conditioning
Dust and Fume Control
Pneumatic Conveying
Vacuum Cleaning
Mechanical Draft



* **One TYPICAL EXAMPLE**

On these flaking rolls where gas flames create considerable heat, Gates V-belts of special synthetic rubber are used because of their proved ability to withstand bad heat and oil conditions. By actual records, on hundreds of installations where oil or heat conditions are severe, Gates special synthetic V-Belts are wearing 2 times to 3 times as long as any natural rubber belts ever used.

Through More Than 6 YEARS in Hundreds of Plants *

GATES *Synthetic Rubber* V-Belts

—Have Been OUTWEARING Any NATURAL Rubber Belts Ever Used!

Now that all industry depends on belts made of synthetic rubber, it is well worth-while to know that Gates Synthetic Rubber V-Belts have been in nation-wide use for more than 6 years—and *through all that time* they have been giving service actually *superior* to belts of *natural rubber!*

***There are, of course, many kinds of synthetic rubber. Gates uses each kind where it best meets some particular service need.**

For example:—one special synthetic rubber which Gates uses extensively in making V-Belts has the ability to withstand oil and heat much better than natural rubber can. Where oil and heat conditions are especially severe, Gates special synthetic V-Belts are giving *3 times* to *4 times* the service life of *any natural rubber* V-Belts ever used.

This is the record not of a few belts over a limited period but of thousands upon thousands of Gates synthetic rubber V-Belts installed in hundreds of plants and factories during the past 6 years.

Gates long headstart in fabricating V-Belts of synthetic rubber is of greater importance to you now than ever before because *all* the V-Belts furnished industrial plants today are of *synthetic rubber.*

You will gain a distinct advantage in V-Belt service by simply picking up your telephone directory and calling the Gates Field Engineer. He will bring right into your plant the full benefits of Gates knowledge and experience without the slightest obligation.

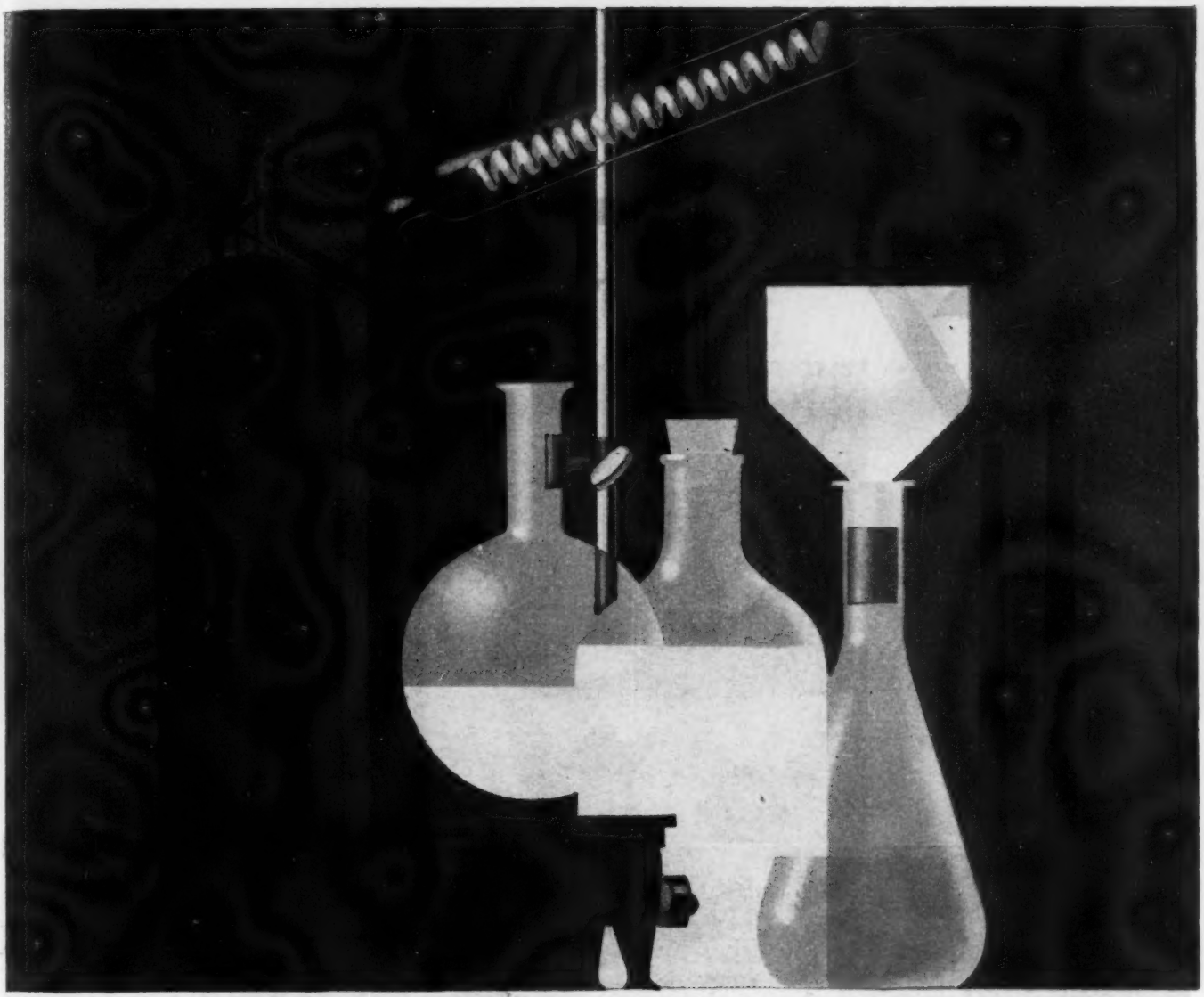
447

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO, ILL. 549 West Washington
DALLAS, TEXAS 2213 Griffin Street
NEW YORK CITY 215-219 Fourth Avenue
BIRMINGHAM, ALA. 801-2 Liberty National Life Building
DENVER, COLO. 999 South Broadway
CHARLOTTE, N. CAROLINA 605 West Fifth Street
GREENVILLE, S. CAROLINA 108 W. Washington Street
ATLANTA, GA. 738 C & S National Bank Building



STAINLESS STEEL... METAL Par-excellence FOR THE PROCESS INDUSTRIES

MERITS OF ALLEGHENY METAL

- ★Highly corrosion and heat-resistant
- ★Easy to form and weld
- ★Easy to clean and keep clean
- ★Requires little maintenance
- ★Low depreciation

THERE are a lot of new faces along the street—high-octane gas, synthetic rubber, magnesium, dehydrated foods, war chemicals and explosives, just to name a few.

But Allegheny Metal kept pace—with new grades, new techniques to meet the requirements for processing these products. There was the need for high resistance to chemical attack, and to oxidation at heat—the need for great strength, long life, easy cleaning and freedom from contamination—requirements, all of them, that stainless steel answers best.

If—somewhere along the line in the manufacture of food and dairy products, drugs and chemicals, oil and plastics, textiles and paper—your plans would be profited by a steel with Allegheny Metal's special qualifications, let us help you develop them. Allegheny Ludlum Steel Corporation, Brackenridge, Pa.

Allegheny Metal is also handled and stocked by all Joseph T. Ryerson & Son, Inc. warehouses

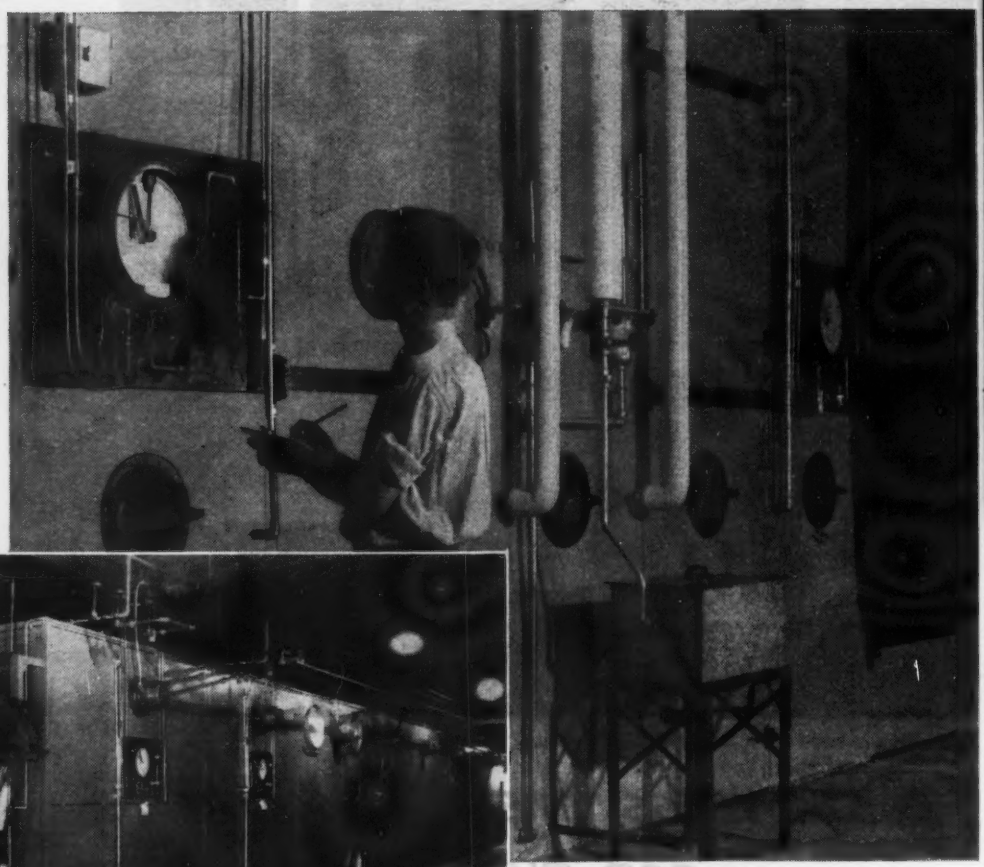
ALLEGHENY METAL

The Time-Tested Stainless Steel

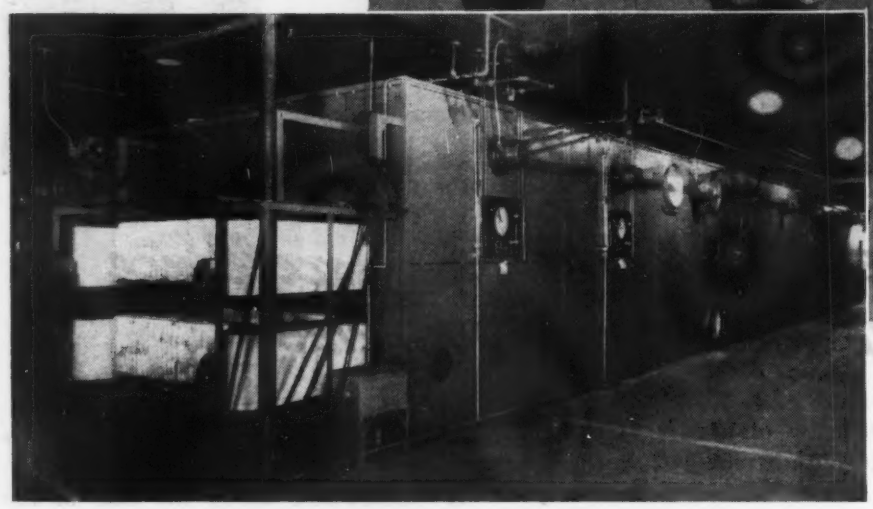
W&D 9370-C

REMEMBER THE NAME TODAY FOR THE NEEDS OF TOMORROW

Why Automatic Dryer Control is over 90% Foxboro



Typical installation of Foxboro Temperature-Humidity Control on 40 dryers in a Southern rayon plant.



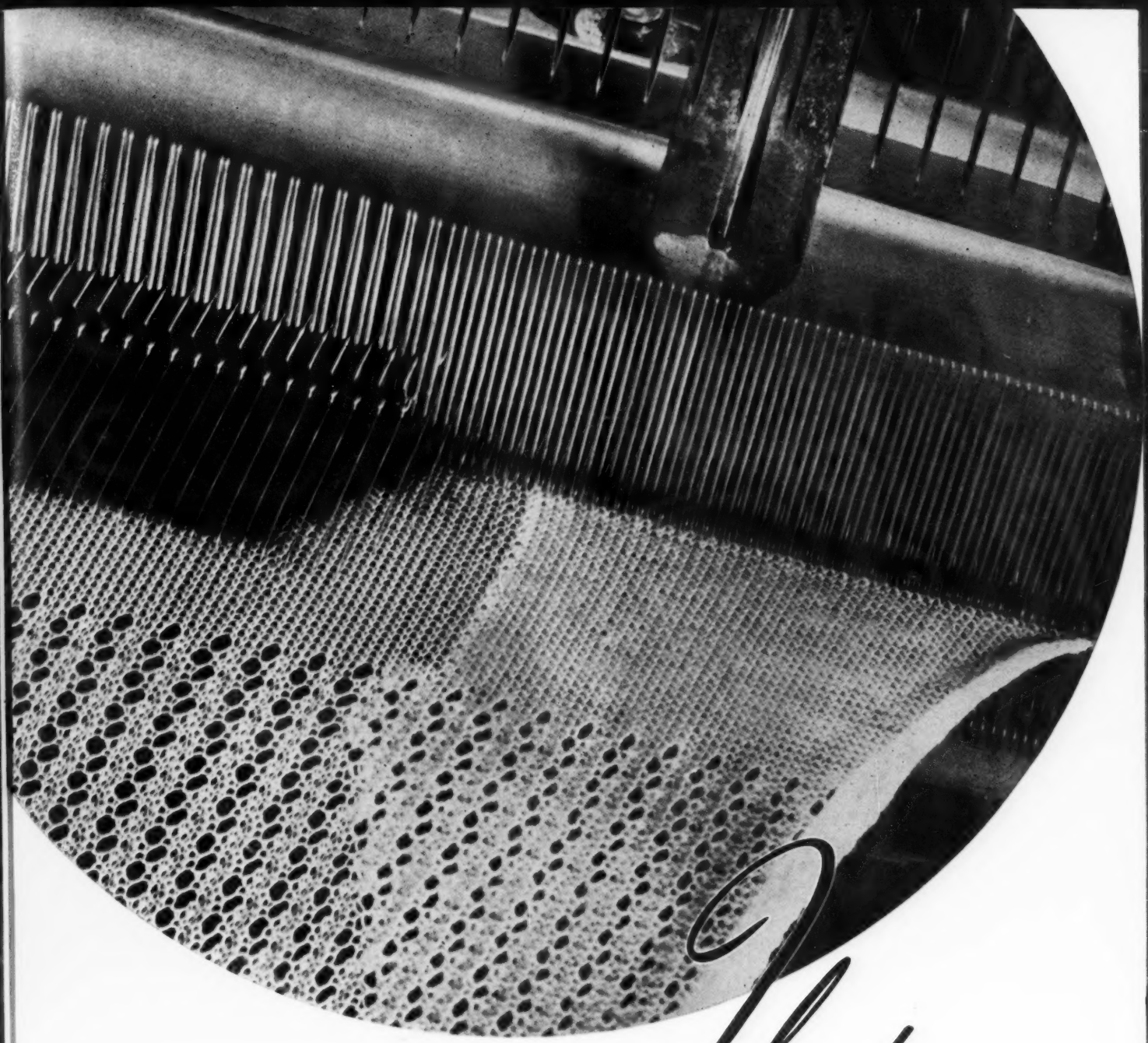
Another modern Foxboro Dryer Control installation in a leading New England textile mill.

Few processes in the textile industry can make such a difference in the quality and efficiency of production as the drying operations. That is why textile men and dryer equipment makers want the best in *control engineering*, as well as dependable *instruments*. It is why they prefer Foxboro Control!

Foxboro engineers *pioneered* improved drying methods by developing the *first* controller that automatically controlled both wet and dry bulb temperatures. The simple, *on-off* control function and compact round-form cases make Foxboro Controllers particularly adaptable to textile dryers. Foxboro developments have enabled improved dryer design that has *doubled* or *tripled* the speed of textile drying!

Get the benefit of this superior "know how" in your operations. Specify dryers equipped with Foxboro Instruments backed by Foxboro Control Engineering. Write for detailed Bulletin 188-4. **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass., U. S. A.** Branches in principal cities of U. S. and Canada.

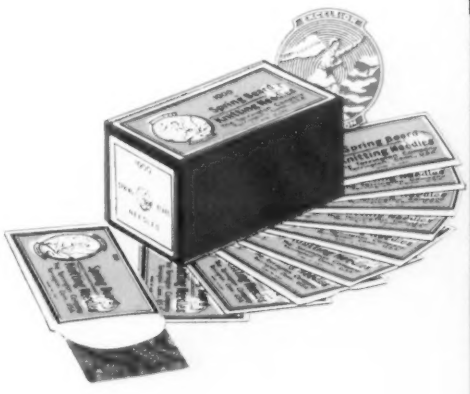
FOXBORO
REG. U. S. PAT. OFF.
Instrumentation



OTO UNDER STROBOSCOPIC LIGHTING EMPHASIZES NECESSITY OF *Uniform* NEEDLES

Taken under stroboscopic lighting at a speed of 1/300,000ths of a second, this unretouched close-up photo reveals how dimensional uniformity in needles is reflected in the uniformity of the stitches they produce. Here variations imperceptible to the eye in the length, width or shape of the needles could be easily detected in the quality of knitting.

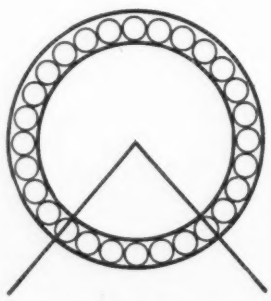
To guard against the possibility of such variations in needles Torrington has developed special machine manufacturing methods that maintain uniform overall dimensions automatically. This is one of the reasons why Torringtons are the criteria of needle quality throughout the knitting world . . . and why such a large percentage of mills insist on their use.



Torrington SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

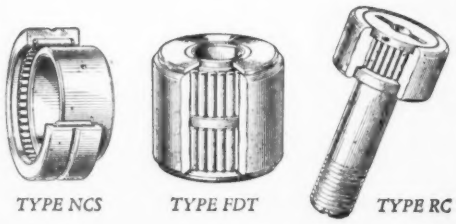
Design of Needle Bearings Eliminates Stress Concentrations

TYPE DC *DC (Inner Race)* *TYPE AT*



LOAD ZONE

Note how the load is distributed. The large number of the needle rollers which are within the theoretical "load zone" provide many linear inches of contact with bearing surfaces.



TYPE NCS *TYPE FDT* *TYPE RC*

•

FULL COMPLEMENT OF NEEDLE ROLLERS PROVIDES MANY LINEAR INCHES OF CONTACT; DISTRIBUTES LOAD OVER LARGER AREA

•

Elimination of stress concentrations is one of the outstanding features of all Torrington Needle Bearings which stems from their basic design principle —the use of *a full complement* of small diameter needle rollers.

In operation, this means that the load on the Needle Bearing is widely distributed over a comparatively large number of rollers, and each in turn provides "line" contact with inner and outer race. As illustrated in the accompanying diagram, a large number of needle rollers are always within the "load zone" as the rollers revolve around the shaft. Thus the load is *evenly* distributed and the full capacity* of the bearing may be utilized without fear of concentration of stresses at any given point or on any single component of the bearing. As long as the design load is within the rated capacity of the bearing, the dangers of rapid or uneven wear, of stress fatigue, or of brinelling bearing parts are virtually eliminated.

This feature, coupled with the efficient lubrication of rollers, made possible by the design of the outer raceway which serves to hold the lubricant within the bearing, insures maintenance-free operation and long service life.

For All Design Requirements

From the several types of Torrington Needle Bearings available, the design engineer may select the one best suited to the requirements of a particular application. Load, speed, service conditions, design limitations and cost considerations can be met with full confidence that the right Torrington Needle Bearing, properly installed, will provide long bearing life and freedom from service attention. Let our engineering department work with you in selecting the correct type Needle Bearing for your application. Experience in layout and design of hundreds of different applications will enable our engineers to give practical assistance in meeting your design requirements. More information on the types and sizes of Torrington Needle Bearings together with a more complete description of the advantages of these compact, anti-friction units, will be found in our Catalog No. 116 available on request. Send for your copy.

**Utilization of full or theoretical capacity of Needle Bearings is dependent upon proper shaft hardness, correct installation and other factors. See Torrington Needle Bearing Catalog for more complete information.*

THE TORRINGTON COMPANY

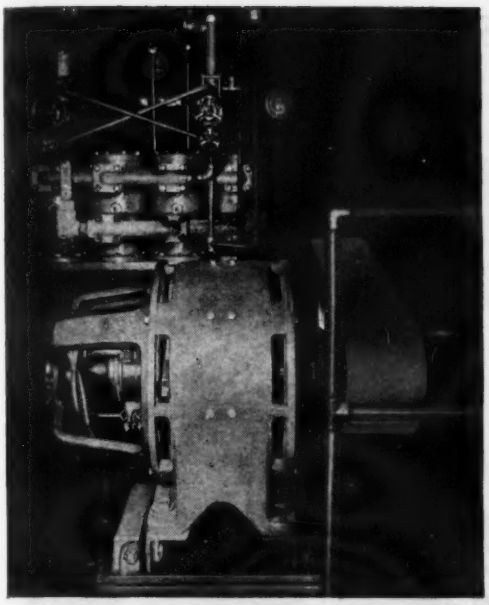
Established 1866 • Torrington, Conn. • South Bend 21, Ind.

"Makers of Needle Bearings and Needle Bearing Rollers"

New York Boston Philadelphia
Detroit Cleveland Seattle
San Francisco Chicago Los Angeles
Toronto London, England

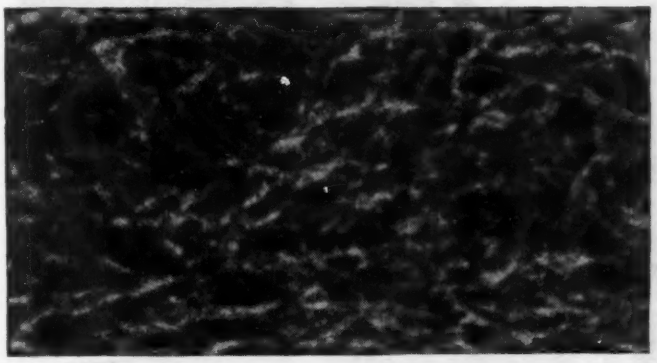
LET'S GO U.S.A. KEEP 'EM FLYING!

TORRINGTON
NEEDLE BEARINGS

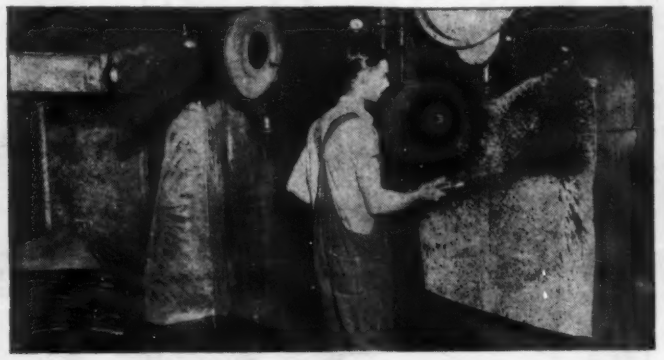


No substitute can equal THIS... for Least Maintenance

As an example of successful change-over to pivoted motor base with flat leather belt drive, this compressor, formerly chain-driven and now belted by a 10½" heavy double "Research" Leather Belt, is reported as operating "with all previous troubles eliminated." 40 H. P. motor, 850 R.P.M., 12" x 12" motor pulley (split fibre lagging over chain sprocket), 36" x 11" driven pulley.



Leather's fibres, interlaced in all directions, give leather belting *resiliency*. Thus *leather*, above all other transmission materials, has the ability to "give" under strain and then "recover". Frequent overloads are handled with minimum slip, without damage to belt, bearings or equipment.



Special "Research" manufacturing processes add a second "plus" to the "plus" you get from any first-quality leather belt — guaranteeing 3% greater production. Exclusive "weight-controlled" curry (shown above) gives maximum pulley grip . . . pre-stretching according to hide characteristics eliminates non-elastic stretch . . . patented "tension-cementing" gives positive ply adhesion strength.

Extra Values from "Research" Belting's

"DOUBLE PLUS"

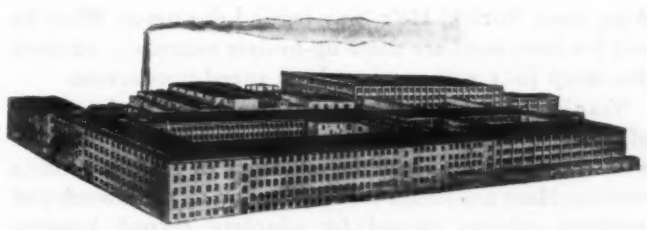
(all that's *better* in leather, made *best* in "Research")

- **MORE PRODUCTION** with leather belts because of leather's superior traction, which improves with age.
- **MOST PRODUCTION** with "Research" because "Research" processing adds extra pulley grip. 3% more production guaranteed.

- **LESS MAINTENANCE** with leather belts because natural "give-and-take" handles shock loads without undue strain.
- **LEAST MAINTENANCE** with "Research" because pre-stretching removes non-elastic stretch, saving take-ups.

- **LONGER LIFE** with leather belts because leather's tough, interlocking fibres have high resistance to both surface wear and internal friction.
- **LONGEST LIFE** with "Research" because the pre-stretched fibres are properly lubricated by precise, "weight-controlled" currying.

3% MORE PRODUCTION... 2 TO 4 TIMES LONGER LIFE... FROM "RESEARCH" BELTING'S DOUBLE PLUS



MORE UNIFORM results can be expected from "Research" Belting, manufactured from green hide to finished belt under one roof, under one control, in the world's largest industrial leather plant.

The pivoted-base-flat-leather-belt is the most modern, lowest-cost drive. Write 326 Franklin St., Worcester 4, Mass. for free "Short Center Book".

GRATON AND KNIGHT

"RESEARCH" BELTING

Graton & Knight Company, Worcester 4, Mass.

Branches and distributors everywhere. Look under "Graton & Knight" in "Belting" section of classified telephone directory or THOMAS' REGISTER.

"Yorick is our oldest employee"

Alas, poor Yorick! He's 'way behind the times. What he and his boss need are some up-to-date records... records that keep pace with modern high-speed production.

Year in and year out, Uarco has been helping thousands of businesses improve their records... supplying business with forms that increase the efficiency of plant and office routine. Here are forms that put an end to guesswork and needless mixups caused by obsolete record keeping methods. Uarco forms put accurate information *where* it is needed, *when* it is needed.

Eliminating duplicated effort is another job for Uarco. For, with these forms, 7 or 8 or more clear carbons can be made in a single operation . . . thus preventing errors due to excessive departmental record making. Uarco forms are especially made for your particular needs. They are designed either for handwritten use or for machine use, may be carbon interleaved or non-interleaved, may be used in a Uarco Autographic Register, typewriter, billing machine or tabulating machine.

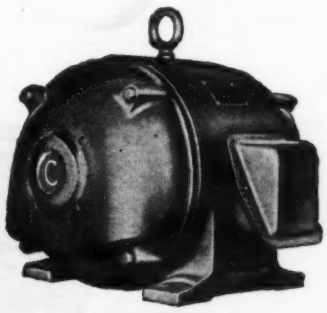
Why not find out today the many ways that Uarco forms can help your business? If existing forms will not solve your problem . . . Uarco will design forms that will. A Uarco representative will gladly consult with you . . . . without obligation on your part.

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*

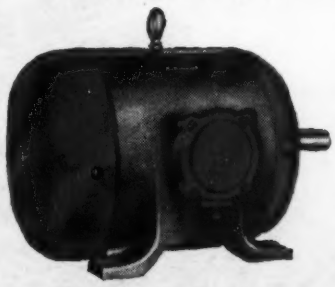
TEFC—Protects Against Destructive Dust, Grit, Powdered Materials

3 OTHER TYPES OF PROTECTION

Form J
General Purpose Application



Splash Proof Protection



Century Explosion Proof Motor

FOR PROTECTION Against Atmospheres That Contain Acid and Alkali Fumes – Abrasive Dusts

Use Century TEFC Motors

Century Totally Enclosed Fan Cooled motors are designed to operate continuously in abnormal atmospheres found in chemical and processing plants.

They provide protection against atmospheres containing acid and alkali fumes, oil or animal fats, coolant solutions, metallic, abrasive, and other destructive dusts, grit, and powders.

Where atmospheres are charged with high concentrations of destructive fumes, Century TEFC motors can be provided with special insulations.

Why not find out how Century TEFC motors can help you avoid production delays and help achieve continuous, economical performance? Call in a Century engineer.

Century C MOTORS

CENTURY ELECTRIC CO.
1806 Pine Street, St. Louis 3, Missouri
Offices and Stock Points in Principal Cities

383

In the size of the powder grains is a secret of BRIGHTNESS!

WESTINGHOUSE PRESENTS JOHN CHARLES THOMAS • SUNDAY 2:30 EWT., N.B.C. • "TOP OF THE EVENING" • MON., WED., FRI., 10:15 EWT., BLUE NETWORK

Phosphor powder particles, like human beings, are of infinite variety. Some are fat, some lean. Some are dull . . . and some are *bright!*

Determining the *size* of particle that has the most sparkle has proved one of the most exciting of Westinghouse research problems.

Out of thousands of batches tested, one size has consistently shown the highest degree of fluorescence. This discovery has resulted in the development of phosphor powders with the greatest life and sparkle.

These powders are now used in all Westinghouse fluorescent lamps. That's why the Westinghouse fluorescent lamp of today delivers bright, high efficiency light wherever it is installed.

And that's why, when you order fluorescent lamps, it pays to ask for Westinghouse. Your Westinghouse dealer can supply you right now for essential war lighting . . . and also to a limited extent for essential civilian use. Westinghouse Electric & Manufacturing Co., Bloomfield, New Jersey.

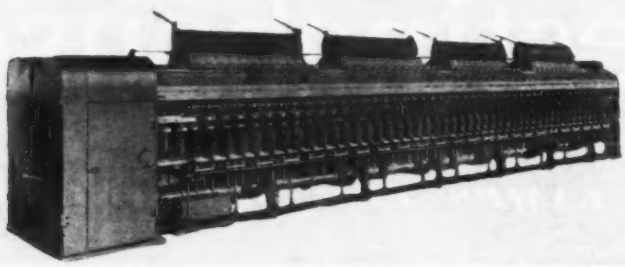
HELP SHORTEN THE WAR . . . BUY MORE BONDS THAN BEFORE!

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

MAZDA LAMPS FOR SEE-ABILITY

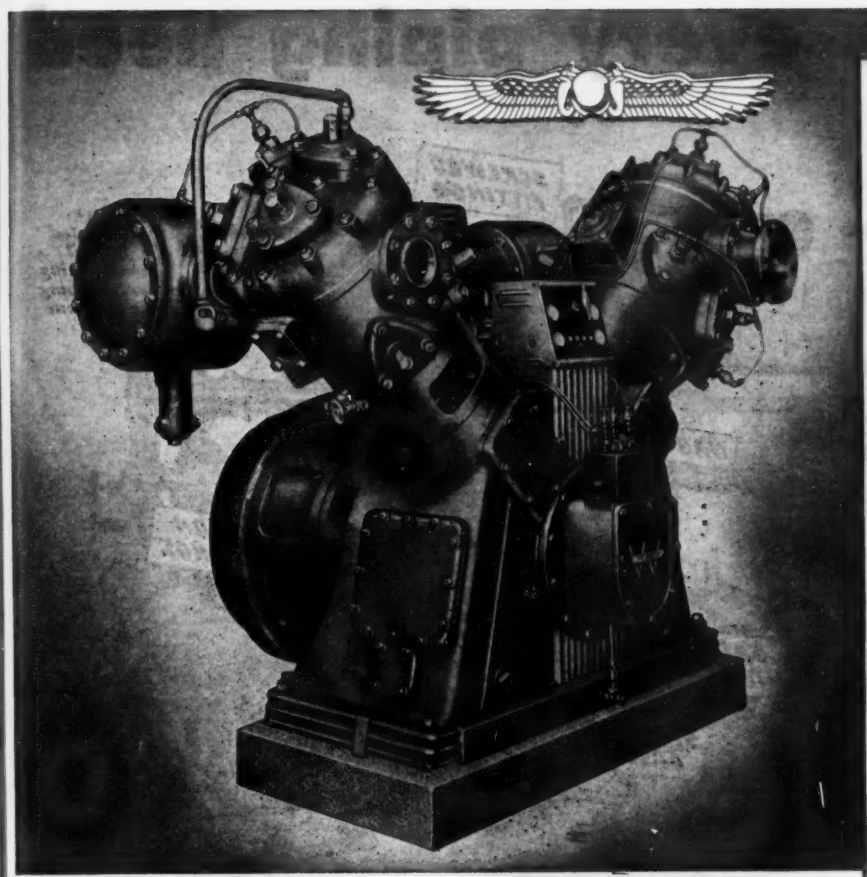
HERE IS A CYLINDER ARBOR BEARING that is as simple as a babbitt bearing. Alloy steel rollers and hardened and ground steel race merely supplant the babbitt. The rollers run directly on the shaft which has been hardened and ground. The surface of this arbor where the rollers run is as hard as the bearing outer sleeve and will not wear. Hardening the shaft strengthens it, and the rollers provide greater capacity; they do not wear as fast—yet they have a lower coefficient of friction. Power is saved and oil is saved. Frames are kept cleaner because oil does not leak out on floors and tapes.

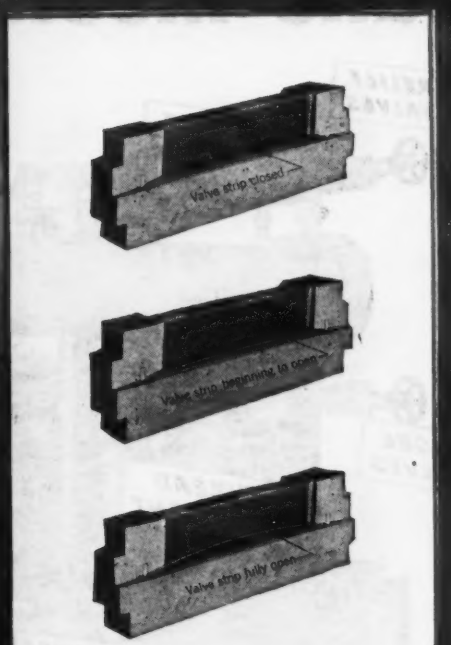


Thousands of Hyatt Roller Bearings operating today in Cotton, Wool and Rayon Spinning and Twister Frames have proved their worth. Specify these better bearings by name for greatest satisfaction.

HYATT BEARINGS Division
GENERAL MOTORS CORPORATION
HARRISON, NEW JERSEY

NEW WORTHINGTON HUSKIE PACKAGED COMPRESSORS





The simplest, lightest, most efficient compressor valve ever made. A thin strip of steel seats by increasing contact from each end to the center. No springs, buffer plates or cushioning devices. Fits accurately even when valve seat is warped, and patented end inserts prevent pinching.

For Cooler Running . . . Trouble-Free Operation

Here's a lot of long-lived power, from 400 to 1350 cu. ft. per minute displacement, in a new streamlined "package" specially designed for trouble-free operation, low installation and maintenance costs.

In both 3 and 5-step models, variable capacity control results in the *cooler operation* of Worthington's new Y Angle Type Huskie Compressors. Cylinders are open to cool suction air at most stages of unloading.

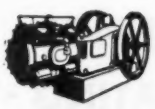
Other Worthington "Outperformance" features include Feather Valves*— forced feed lubrication — filters for uninterrupted oil filtration, non-stop filter-cleaning. Write for more details. Describe your application.

WORTHINGTON PUMP AND MACHINERY CORPORATION
HARRISON, N. J.

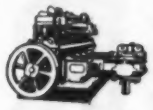
BEHIND THE NAME WORTHINGTON

NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON HUSKIE

Y Type . . . Horizontal . . . Vertical . . . Radial

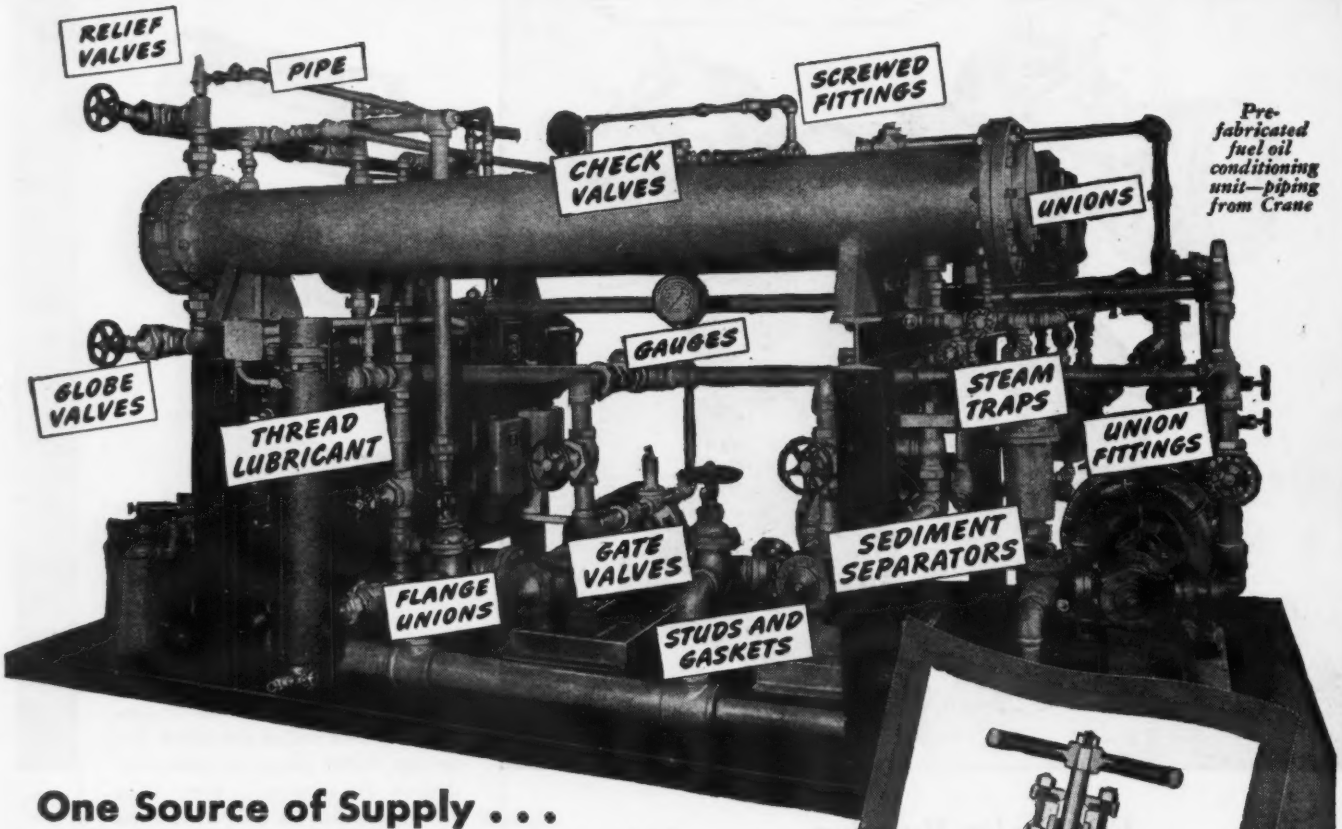


Portable . . . Gas Engine Compressors . . . Vacuum Pumps



AC-4

Complete systems or single fittings . . . Crane meets every piping need



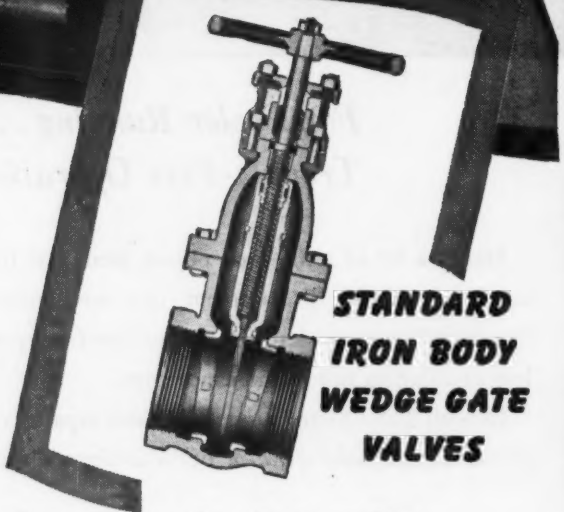
Pre-fabricated fuel oil conditioning unit—piping from Crane

One Source of Supply . . . One Responsibility for Materials

In buying day-to-day piping needs—or when you're planning complete new systems—the benefits of single source supply can be yours. Crane supplies everything for piping—valves, fittings, pipe, and all accessories—as indicated by the installation above. And where can you expect more complete selection than in the world's largest line of flow-control equipment for every service.

Ordering—handling parts stocks—maintenance—all these operations are simplified when you Crane equip. More important, one responsibility for quality and craftsmanship of piping materials is a primary aid to good installation. Crane meets that responsibility with 89 years of manufacturing experience.

CRANE CO., 836 S. Michigan Ave., Chicago, Ill.



STANDARD IRON BODY WEDGE GATE VALVES

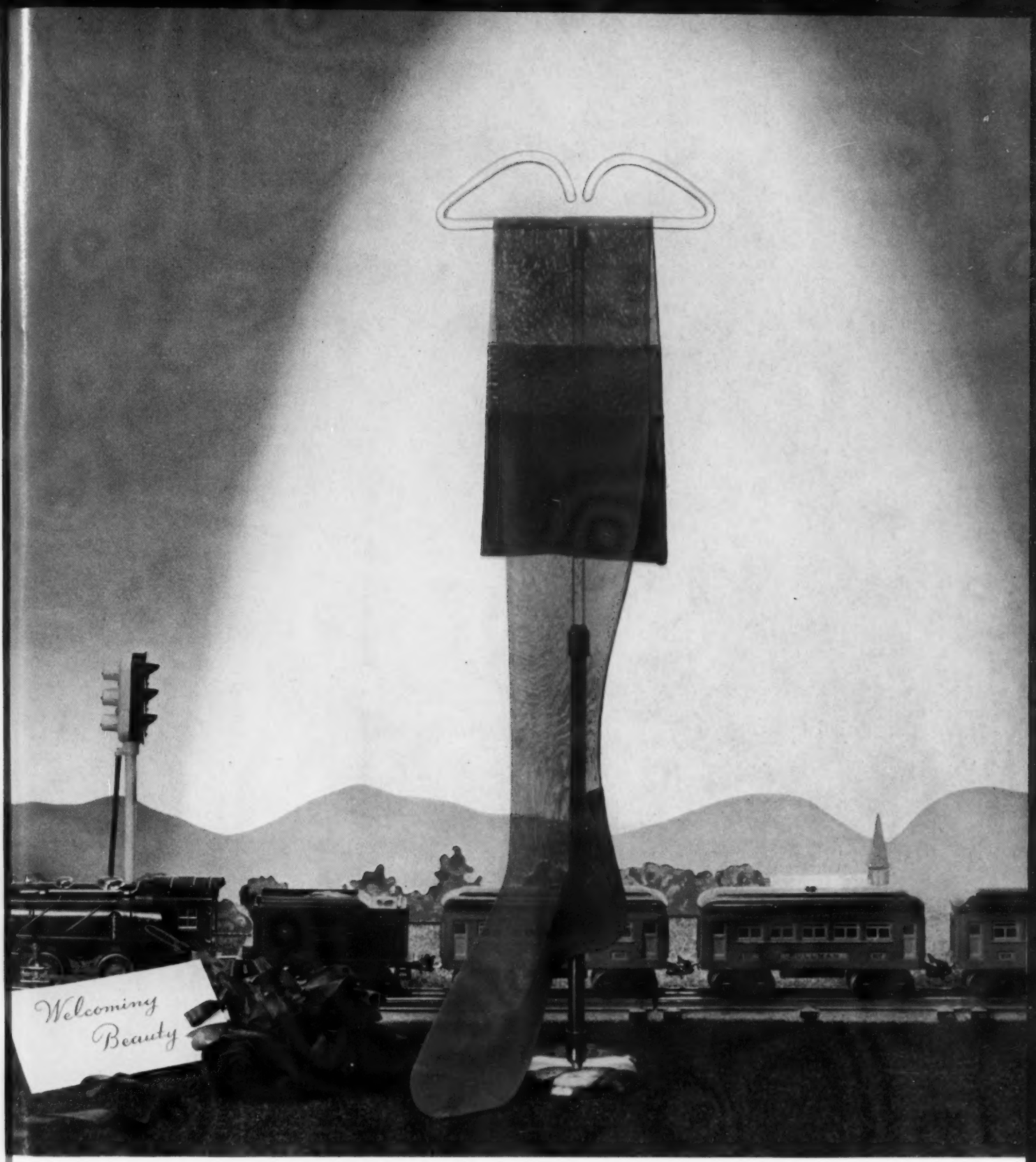
One Standard of Quality . . .

Because there is adequate quality in every part, the whole system is thoroughly dependable when it's Crane equipped. Such quality is typified by Crane Iron Body Gate Valve design: Strong body sections resist severest line strains. Straight-through ports give streamline flow. A deeper stuffing box lengthens packing life. Extra long guides keep disc travel true, while balanced stem design maintains smooth and positive operation.

CRANE

VALVES • FITTINGS • PIPE

PLUMBING • HEATING • PUMPS



Welcoming Beauty... Every woman knows the welcoming thrill of accepting clear, even-textured full-fashioned stockings. Every stocking manufacturer knows that money invested in good needles pays big dividends in better knitting results. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

"Good counsel has no price."

BOHN

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

Bur. of Ord. Flag and Navy "E"
July 25, 1941

One Star All-Navy "E" Burgee
January 25, 1942

Two Star Army-Navy "E"
July 25, 1942

Three Star Army-Navy "E"
January 25, 1943

Four Star Army-Navy "E"
January 11, 1944

On drafting boards in the textile industry, designs for new equipment are taking shape.

For kettles and tanks . . . vat linings, rolls and heating coils . . . for hoppers, reels and other dyeing and bleaching equipment, corrosion resistant Monel is specified . . . time after time.

Through more than 25 years of experience with this strong, tough alloy, textile manufacturers have found that it retains a smooth, hard finish *even after years of contact with salt, alkalies, acids and dye liquors.*

Monel lessens the danger of off shades. It does not absorb dyes . . . has a minimum effect on colors. Cleaning is quick and easy . . . no boil out is necessary.

In addition, Monel is readily fabricated. It may be welded, soldered, brazed, machined, drawn or forged by any of the commonly used methods.

Although today's stock is not large, some standard mill forms—sheet, rods, tubes, angles and wire—are available. A limited selection of bolts, screws, rivets, cotter pins and chain . . . as well as cast fittings and pump parts . . . may also be obtained for repair or replacement purposes.

After war needs have been met, Monel will be generally available. Specify it in your plans for new equipment.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street **New York 5, N. Y.**

5 MORE REASONS WHY MONEL IS SPECIFIED

High strength and fatigue resistance facilitate improved designs.

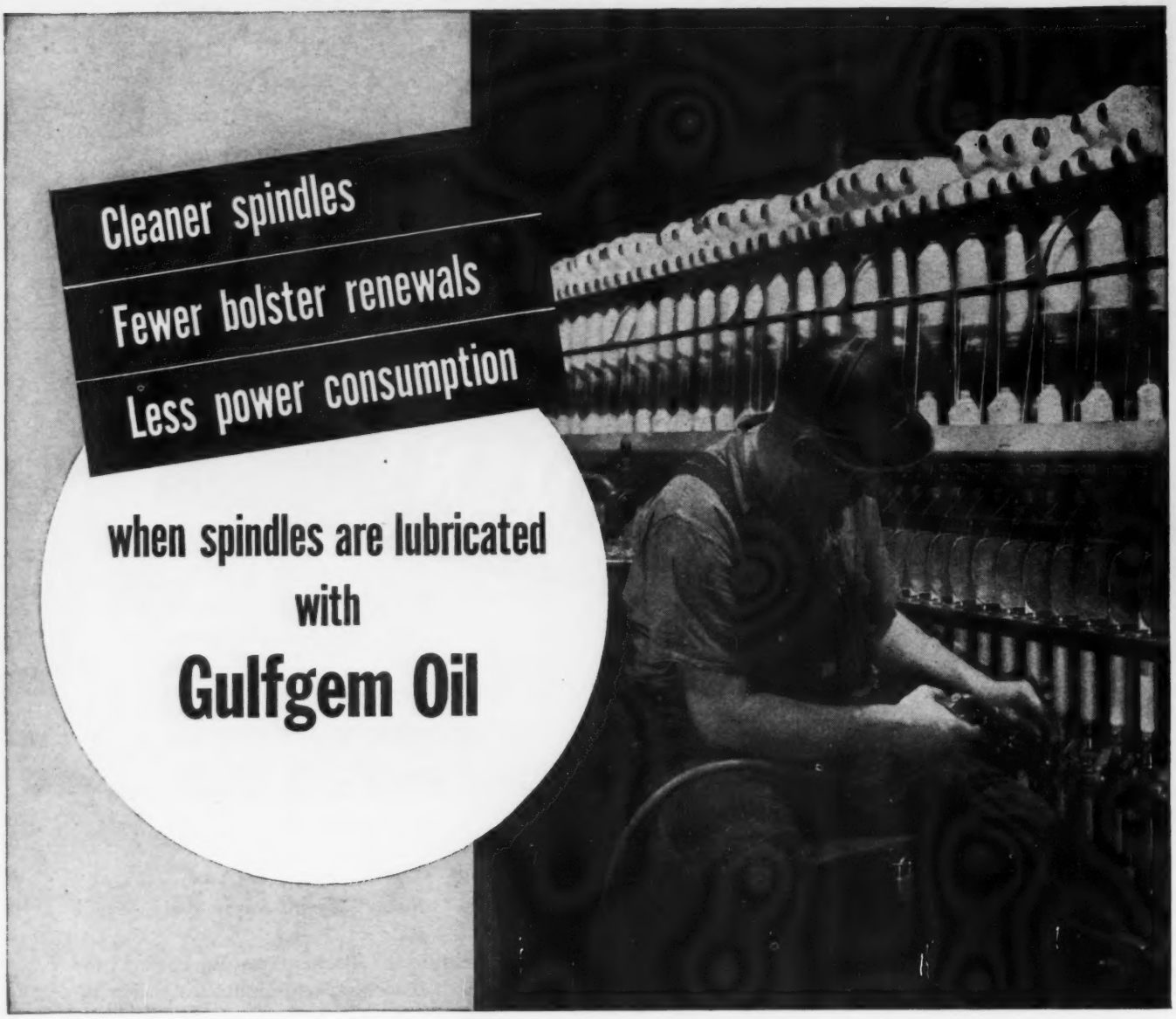
High strength and resistance to corrosion lengthen equipment life . . . reduce maintenance expense and downtime.

Takes on high polish in use . . . no roughness to snag or tear fabrics.

Unaffected by most of the commonly used dyestuffs.

Eliminates possibility of rust damage.

Monel



EXPERIENCE OF HUNDREDS of leading mills has demonstrated conclusively that Gulfgem Oil provides better lubrication for spindles—the kind of lubrication that insures maximum poundage from spinning frames.

Here's the important reason for the outstanding record of Gulfgem Oil: This highest quality lubricating oil is not only refined by conventional methods, but is super-refined by the Gulf Alchlor Process, the most effective method known for producing a spindle oil with maximum resistance to oxidation and gumming.

Thus Gulfgem Oil provides a tough and stable film which insures less wear, reduced power consumption, longer intervals between spindle base cleaning periods, and lower maintenance costs. Gulfgem Oil is the world's finest oil for spindle lubrication!

We suggest that you talk with the Gulf Lubrication Service Engineer in your vicinity about this superior spindle lubricating oil. He will be pleased to give you complete details—without obligation. Write, wire, or phone your nearest Gulf office today.

Back the Attack . . .
Buy More War Bonds!

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION
GULF REFINING COMPANY
GULF BUILDING, PITTSBURGH 30, PA.

TOUGH SUPPLY PROBLEM?

Call us..

UNITED STATES STEEL SUPPLY COMPANY

USS STEELS

SERVICE

YOUR supply problems may not present difficulties like the jungle, but they can cause plenty of other headaches. And they can hold up the main supply line to the Armed Forces. Perhaps we can help you out of a jam. A call to us has broken many a bottleneck—speeded many a war order.

If you need steel, steel products, tools and machinery, phone, wire or write our nearest warehouse. We'll get what you need into your hands in a hurry, if at all possible—subject, of course, to priority requirements.

Even today, our stocks are large. They include National Emergency Alloy Steels, which have proved so successful in meeting conditions resulting from the shortage of critical materials. Try us. Your call will receive prompt attention. And nine warehouses, located in the great production centers, assure quick delivery of material on hand.

For Welding Needs

We can supply Welding Wire, for electric arc welding, such as:

STAINLESS STEEL ELECTRODES
HARD-SURFACING ELECTRODES
MILD CARBON ELECTRODES

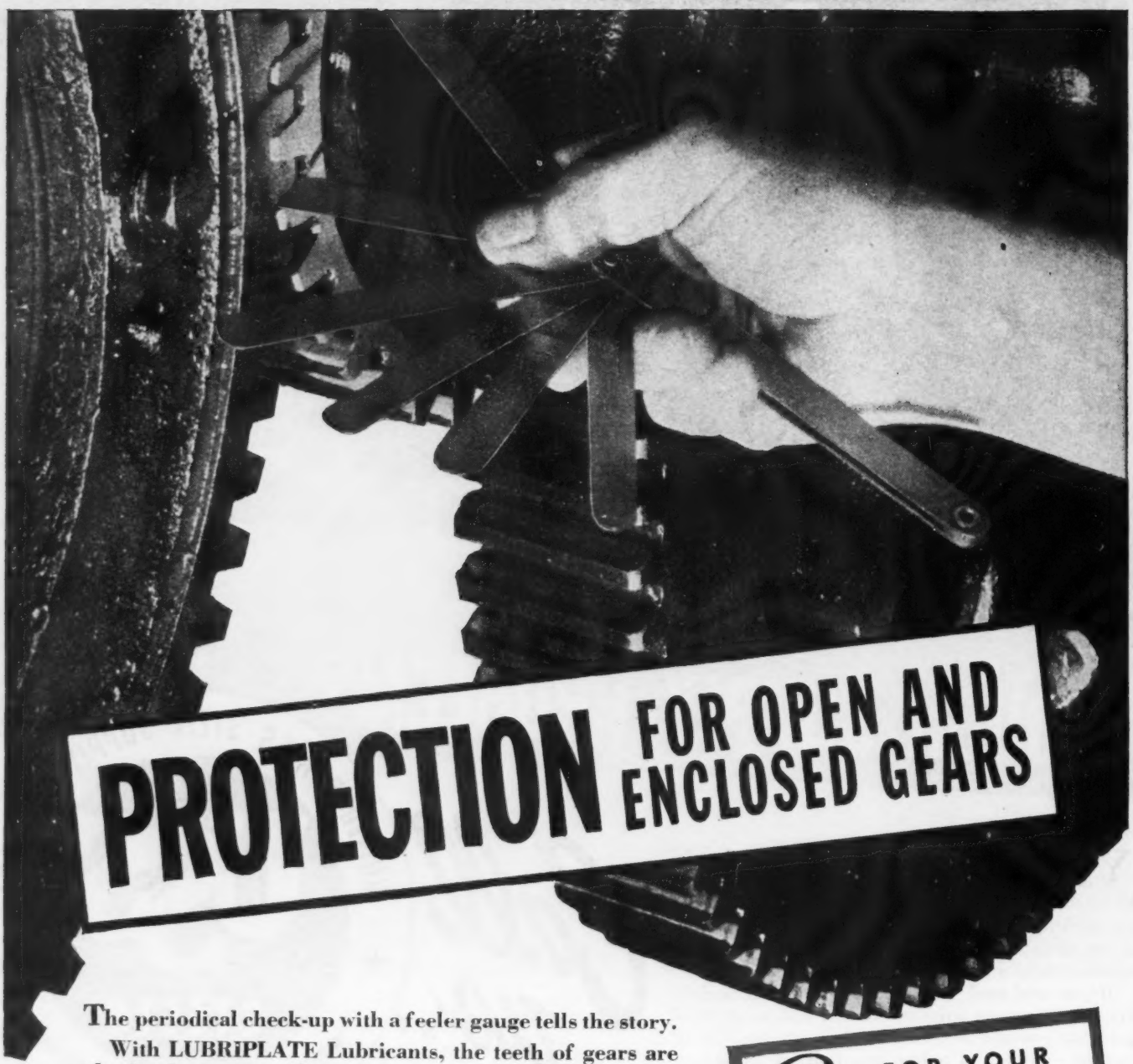
We also offer Welding Machines, Protect-O-Metal for elimination of weld spatter and Havens "C" Protected Clamps. Write, phone or wire our nearest warehouse.

9 CONVENIENTLY LOCATED WAREHOUSES

CHICAGO (90),	1319 Wabansia Ave., P. O. Box MM	Teletype CG. 605	BRUnswick 2000
BALTIMORE (3),	Bush & Wicomico Sts., P. O. Box 2036	Teletype BA. 183	GILmore 3100
BOSTON (34),	176 Lincoln St., Allston, P. O. Box 42	Teletype BRTN. 10	STAdium 9400
CLEVELAND (14),	1394 E. 39th St.,	Teletype CV. 153	HEnderson 5750
MILWAUKEE (1),	4027 West Scott St., P. O. Box 2045	Teletype MI. 587	Mitchell 7500
NEWARK (1), N.J.,	Foot of Bessemer St., P. O. Box 479	Teletype NK. 74	Bigelow 3-5920
			REctor 2-6560 · BErgen 3-1614
PITTSBURGH (12),	1281 Reedsdale St., N. S.	Teletype PG. 475	CEdar 7780
ST. LOUIS (3),	21st & Gratiot Sts., P. O. Box 27	Teletype SL. 384	MAin 5235
TWIN CITY,	2545 University Ave., St. Paul (4), Minn.	Teletype STP. 154	NEstor 2821

UNITED STATES STEEL SUPPLY COMPANY

UNITED STATES STEEL



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The periodical check-up with a feeler gauge tells the story.

With LUBRIPLATE Lubricants, the teeth of gears are absolutely separated by a load carrying film. Metal cannot touch metal. LUBRIPLATE lowers operating temperatures and seals the gears against rust and corrosion. Yet, in spite of its protective qualities, LUBRIPLATE does not cause drag. Even the most delicate, high speed gears operate better with it. LUBRIPLATE reduces friction to a minimum.

Yes, open and enclosed gears as well as chains, slides, sleeve and anti-friction bearings and all contacting parts last longer and require less power to drive them when lubricated with LUBRIPLATE. Let us send you a copy of "The LUBRIPLATE Film" that tells the whole story. It is written especially for your industry.

Rx FOR YOUR MACHINERY

No. 3—Ideal for general oil type lubrication. Ring oiled bearings, wick feeds, sight feeds and bottle oilers.

No. 8—Because of its high film strength and long life reflects outstanding performance in most types of enclosed gears (speed reducers).

No. 107—One of the most popular grease type products for general application by pressure gun or cups.

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No. 130-AA—Known nationwide as the superior lubricant for open gears, heavy duty bearings, wire rope, etc.

BALL BEARING—This is the LUBRIPLATE lubricant that has achieved wide acclaim for use in the general run of ball and roller bearings operating at speeds to 5000 RPM and temperatures up to 300 degrees F.

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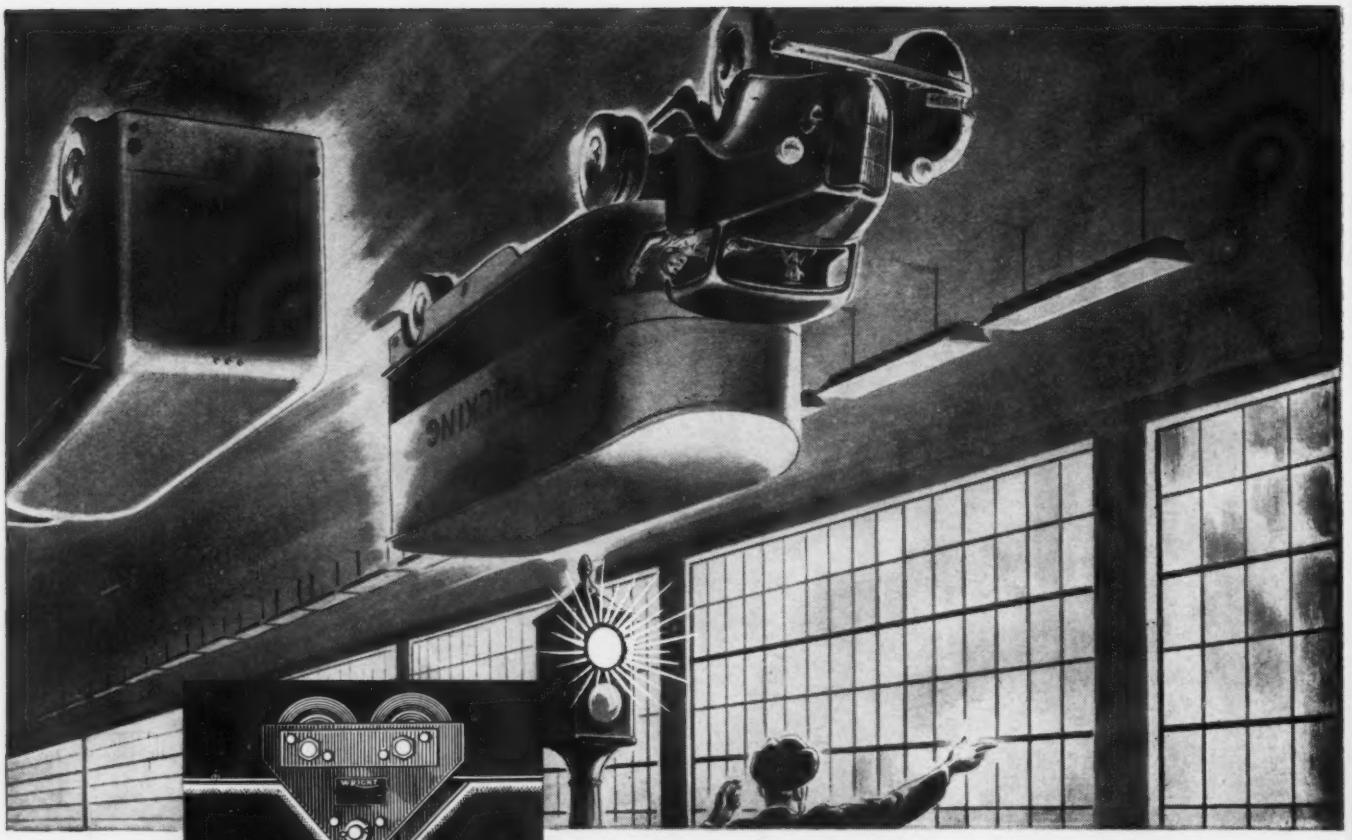

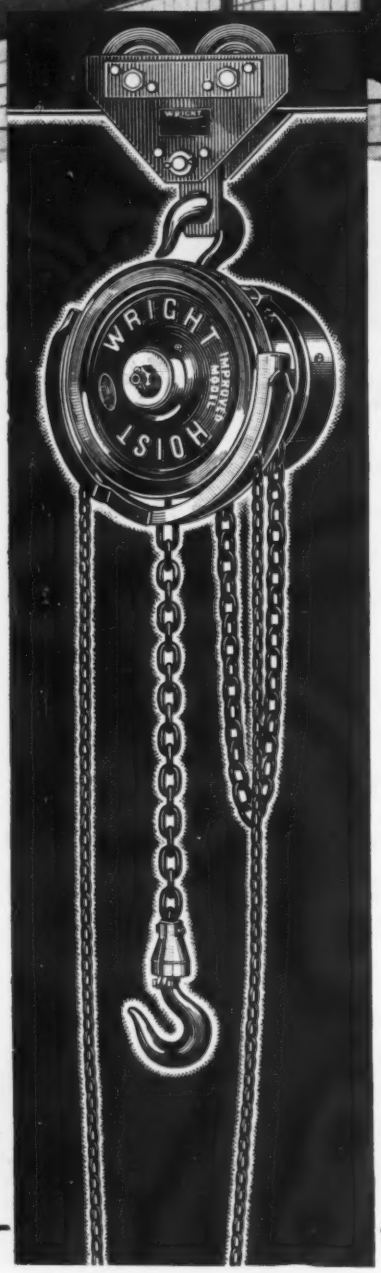

WRIGHT MAKES HIGHWAYS OF THE SKYWAYS OF YOUR PLANT

WRIGHT engineers (and **WRIGHT** Hoists and Cranes) convert idle ceilings into production boulevards. **WRIGHT** Improved High Speed Hoists, **WRIGHT** *Speedway* Electric Hoists, and **WRIGHT** Cranes have long made possible fast, safe, economical, horizontal and vertical transportation of materials.

Your local **WRIGHT** distributor is well qualified to suggest methods for both speeding production and saving money. You will find him listed in your metropolitan classified telephone directory. If your problem is special, ask your distributor to call a **WRIGHT** engineer, who has had years of experience in solving material handling problems.

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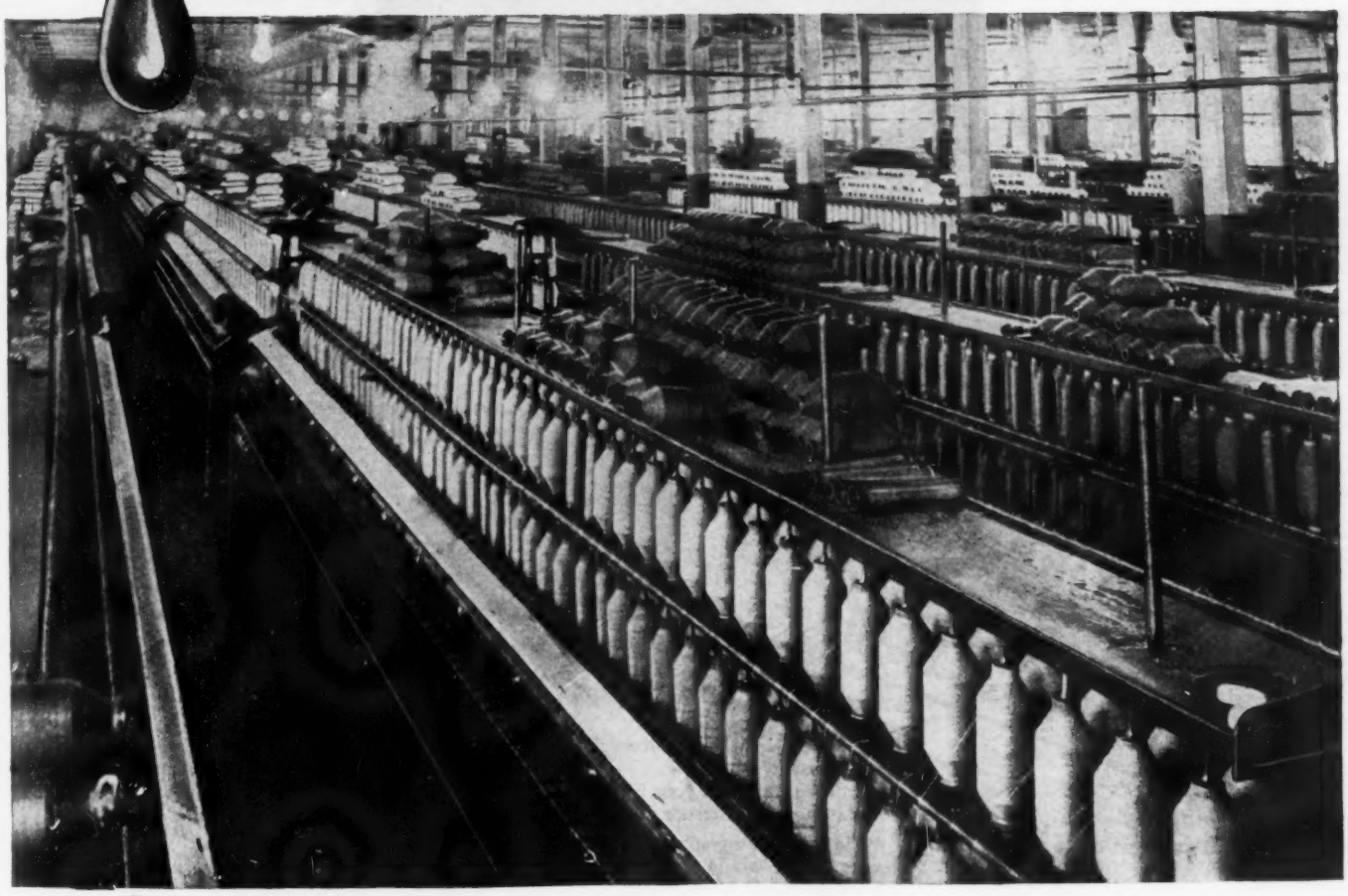
FLYING OVER THE WRIGHT HOIST PLANT

CORRECT Lubrication means *Better Maintenance*



PROBLEM—excessive wear, difficult maintenance.

SOLUTION — *Correct* lubrication.

Sinclair provides LILY WHITE OILS for *correct* lubrication of spindles. These oils have a range of viscosities to suit all loads and speeds . . . hold down temperature and power loss. NO-DRIP LUBRICANTS have adhesive properties that make them throw-resistant and highly efficient on looms, cams, top rolls and comb boxes.

Is maintenance a worry? Let us tell you how Sinclair lubricants make for *better maintenance.*

(Write for "The Service Factor"—published periodically and devoted to the solution of lubricating problems.)

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

SLIP-PROOFING with new, inorganic resins

BOTH these swatches of a lightweight rayon came from the same bolt . . . yet simply rubbing them between your fingers would reveal a startling difference in slippage.

As in the photograph (1) above, the threads of one would separate easily . . . The second would be unaffected.

Put them both through the much more exact A.S.T.M. test for seam slippage . . . and the second swatch would rate at least 50% better than the first.

The second swatch has been slip-proofed with Syton W-20, one of a group of new finishing agents with fascinating possibilities developed by Monsanto textile laboratories.

Specifically, the Sytons are colloidal solutions of polymerized silica, or, in simpler terms, colloidal quartz. When as little as 1% of these amazing inorganic resins is deposited on the individual fibres of silks, nylons, rayons or cottons, slippage is reduced by 50% and more.

The Sytons are effective on a wide range of fabrics, from dress fabrics to sheer hosiery. They can be applied to fabrics in existing mill equipment and are well adapted to present mill practices.

In short, the Sytons are another practical step forward toward *better* fabrics . . . at *lower* production costs . . . through the closer partnership between chemicals and textiles.

As with other, equally promising new Monsanto products for tomorrow's textiles, the Sytons will not be offered for general commercial use until they have been thoroughly proved in mill trials . . . If you are particularly interested in slip-proofing, however, we will be glad to discuss the possibility of arranging trials in your mill on your particular fabrics . . . Simply write or wire: MONSANTO CHEMICAL COMPANY, Merrimac Division, Everett Station, Boston 49, Massachusetts.

Divisions cooperating in Monsanto textile research in addition to Merrimac Division include: Central Research Laboratories at Dayton, Ohio; Organic Chemicals Division and Phosphate Division at St. Louis, Missouri; Plastics Division at Springfield, Massachusetts.

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING INDUSTRY . . . WHICH SERVES MANKIND

FREE ENTERPRISE

The Obligation of Management and Labor to Cooperate...in War...in Peace

The Invasion is on! We have unleashed our full might for military victory. We have confidence that our great strength will bring success. We are strong because we have achieved unity in mobilization and in combat.

Though victory appears assured, we cannot rest until we have done everything in our power to speed the day when death and destruction are halted.

The home front is an important factor in this time element, for the fighting power of our Armed Forces depends upon their weapons. Napoleon's army fought "on its stomach"—man against man. Eisenhower's men fight on their tonnage—tanks, artillery, machine guns, heavy bombers.

As never before in the long succession of wars, the legends of heroic deeds on the battlefronts in this world conflict will be paralleled in history by the great accomplishments on the production fronts. Along with these heroic achievements of our Armed Forces, the world will long remember the record of our production accomplishments which have made us the stongest military power in the world, as well as the arsenal of democracy.

As the conflict reaches its climax, as battles grow fiercer and more destructive, our responsibility becomes greater and more critical. We must coordinate our productive efforts with the same ingenuity and the same precision with which our Armed Forces have coordinated theirs. We dare not waste the productivity of a single man or machine in these critical days.

As our landing craft are discharging our fighting men on the beaches of Europe and the Pacific, they must not want for equipment. No interference with war production for any reason can be justified. There must be no picket lines in America!

The landing of American troops in France virtually has stopped all strikes in the United States. This is important and encouraging news because the prelude to Invasion, unfortunately, has been an epidemic of strikes. Time lost through strikes, during the first four months of 1944, was double that lost during the same period last year. April saw more strikes than any other month since Pearl Harbor, and in May the record again was broken. Here is what happened within two weeks in May:

> Nine thousand men in six Chrysler plants in Detroit were out when a jurisdictional dispute in a "soda pop" war between the American Federation of Labor teamsters and the Congress of Industrial Organizations fired their discontent.
>
> A three-day sit-down strike occurred among 950 employees in the B. H. Aircraft plant over the refusal of the company to discharge a superintendent unsatisfactory to the union.
>
> Thirteen hundred men in the Chevrolet transmission and axle plant at Saginaw struck over a no-smoking rule and a change in shift-starting time.
>
> Two thousand employees at the Browne and Sharpe Manufacturing Company walked out when a woman was hired to fill a job long held by a man.
>
> Production of penicillin, blood plasma, and other medical supplies was halted at two Detroit plants of the Parke Davis Company as 1900 employees struck for a ten-cent raise.
>
> Over 25,000 lumber workers in the Pacific Northwest struck because the War Labor Board denied their demand for a wage increase.

At the end of the third week of May, 70,000 workers in 26 plants in Detroit were idle because of strikes.

Strikes in Detroit alone reduced production as much as a moderately successful German air raid would have done. Far more important than their effect on output is the effect of strikes upon national unity and morale. To our home front and to our Armed Forces, strikes belie our pledge to back the attack with all the power at our command. Hence, strikes limit our all-out war effort.

Prompt and decisive action is needed to keep America free from strikes for the remainder of the war. Stoppages of work on the production lines cannot be condoned while lives are being lost in fighting the enemy.

Most union leaders realize this need and are preparing to impose discipline upon their members who violate the no-strike pledge. The Warehouse Division of the International Longshoremen's and Warehousemen's Union (C.I.O.) recently declared: "Strikes in this time of war are treason against the nation and betrayal of the interests of labor." A message sent by William Green to all heads of American Federation of Labor unions stated:

> "D-day is here. From now on until Hitler is finally crushed, every worker enrolled in the army of production must consider himself a part of the invasion forces of the United States and conduct himself accordingly. I call on you in the name of the American boys who are risking their lives under enemy fire to maintain uninterrupted production under any and all circumstances. Until victory is won every worker must give the same all-out service that our Armed Forces are giving on the field of battle."

Strongest of all was the appeal of R. J. Thomas, president of the United Automobile Workers, to members of his union:

> "Our union cannot survive if the nation and our soldiers believe that we are obstructing the war effort . . . there can be no such thing as legitimate picket lines . . . I appeal to our membership. If you value your union, if you want to live and serve after the war, we must restrain ourselves and our hot-headed brothers today. If we do not, there will be no union after the war."

Union officers are entitled to vigorous support from management and government in their efforts to prevent strikes. Behind many a strike is an accumulation of unsettled grievances. Managements are overworked, and many union shop stewards are new and inexperienced and do not always do their part in turning down cases which lack merit. Both of these conditions make it easy for large backlogs of unsettled grievances to pile up. A special drive to clean up unsettled cases and to prevent new accumulations of them is one way by which managements and local union officials can help shorten the war.

The government too has a contribution to make to the prevention of strikes—both through the prompt disposal of disputes and through firm action against the leaders of strikes. The National War Labor Board and the Regional Boards are disposing of over five thousand cases a month and have made an excellent record in reducing their backlogs. Nevertheless, the boards still have many old cases; and about one out of four strikes has been an effort to get action from one of the labor boards. The boards are entitled to cooperation from employers and unions in keeping down their docket. In instance after instance, cases are dumped in the lap of the board before the union and employer have made a real effort to get a meeting of minds and to work out settlements.

In the present emergency, strikes are an expression of the lack of adequate understanding and team work between unions and management. Any future great upsurge in industrial strife likewise will be due to misunderstanding. After this war this country must not go through another "1919" when the time lost from strikes reached an all-time high. With 13 million workers, or almost half of the non-salaried employees of the country, in trade unions, the power and prestige of unions is greater than ever. ***The long-run prosperity of the country requires that business and labor learn how to cooperate in supporting the policies which produce the largest possible profits and the largest possible payrolls.***

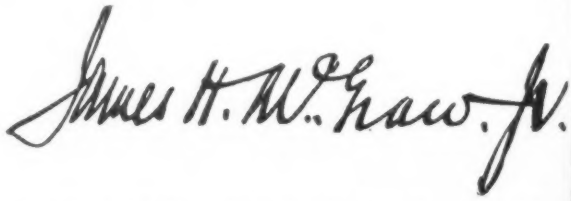
Although business is primarily interested in the largest possible profits, and labor is primarily interested in the largest possible payrolls, both objectives call for the same basic conditions. Payrolls depend upon the prospects for profits. If bad relations between business and labor or unwise public policies cause employers to take a pessimistic view of the outlook for profits, both employment and payrolls will be depressed.

Individual unions and individual employers always will have differences over wages and hours and the status of labor in particular plants or in particular occupations. Some disputes on such issues are inevitable, but resort to arbitration and calm intelligence can help greatly in avoiding strikes in the long run. Cooperation between labor and management is an economic necessity. In our kind of economy, payrolls and profits ***both depend upon the willingness and the ability of business and labor to work together in creating the conditions under which enterprise flourishes.***

The foundation for intelligent and effective cooperation must be accomplished by skillful and imaginative managers in plants throughout the country who are willing to help unions with their problems, and who are able to interest union leaders and their members in the problems of business. Union members and their leaders are keenly interested as a rule in the efforts of management to win new markets. They know that jobs depend upon the success of managements in improving the product, adding new items to the line, and, less frequently, cutting costs and prices. Employees like to be kept informed about what management is doing, what problems it is meeting, and what success it is having. Most of all, they like to have an opportunity to contribute their ideas and suggestions.

The recent epidemic of strikes should not blind us to the fact that even today there are more plants where managements and unions are on good terms than ever before in the country's history. Consider, on the one hand, the extensive and constantly growing efforts of unions to train and develop shop stewards and, on the other hand, the efforts of employers to teach foremen how to carry out the new responsibilities imposed upon them by union agreements. Unions and managements together are learning how to operate together such technical devices as time study and job evaluation. Managements which, several years ago, opposed the provision of umpires to interpret union agreements and to settle deadlocked cases today are taking the lead in suggesting such arrangements.

The war is reaching a crisis, and all groups in the country must be aware as never before of their common interests. This presents an opportunity which should be seized to lay the permanent foundations for more effective team work in American industry. Let history record that the days when Europe was being liberated also were the days when unions and employers were making unprecedented progress in preparing American industry for the return of the service men by developing policies of cooperation between business and unions. Such cooperation will help achieve a peace worthy of our efforts and our sacrifices.



President, McGraw-Hill Publishing Company, Inc.

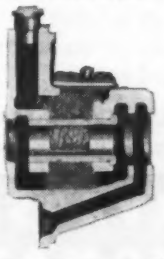
By using Westinghouse loom motors, this mill is enjoying a double saving. In the first place, motor maintenance is held to a minimum. And that means less time out and more time for production. Maintenance costs are reduced because this motor is built especially rugged to withstand the heavy vibration of loom operation. That means extra strength and longer life.

The second saving this mill is making is in power costs. Westinghouse loom motors are designed for unusually high efficiency. Proper relation of rotor weight helps this motor "iron out" some of the peak loads occurring at high frequency in loom drives. The result—increased over-all efficiency and minimum power costs.

With this motor on the job, you can be sure of meeting the strains imposed by new looms before they are "broken in". Ask your Westinghouse representative to give you all the facts. Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. J-94615

NO STARVED BEARINGS
NO OVER-OILING

Westinghouse design eliminates both the danger of wicking of oil from motor bearing housings and waste from excessive oil. Oil cups are located far enough above the bearing to prevent accumulation of lint from wicking oil from housing. If too much oil is added, overflow drains excess oil outside the end brackets.



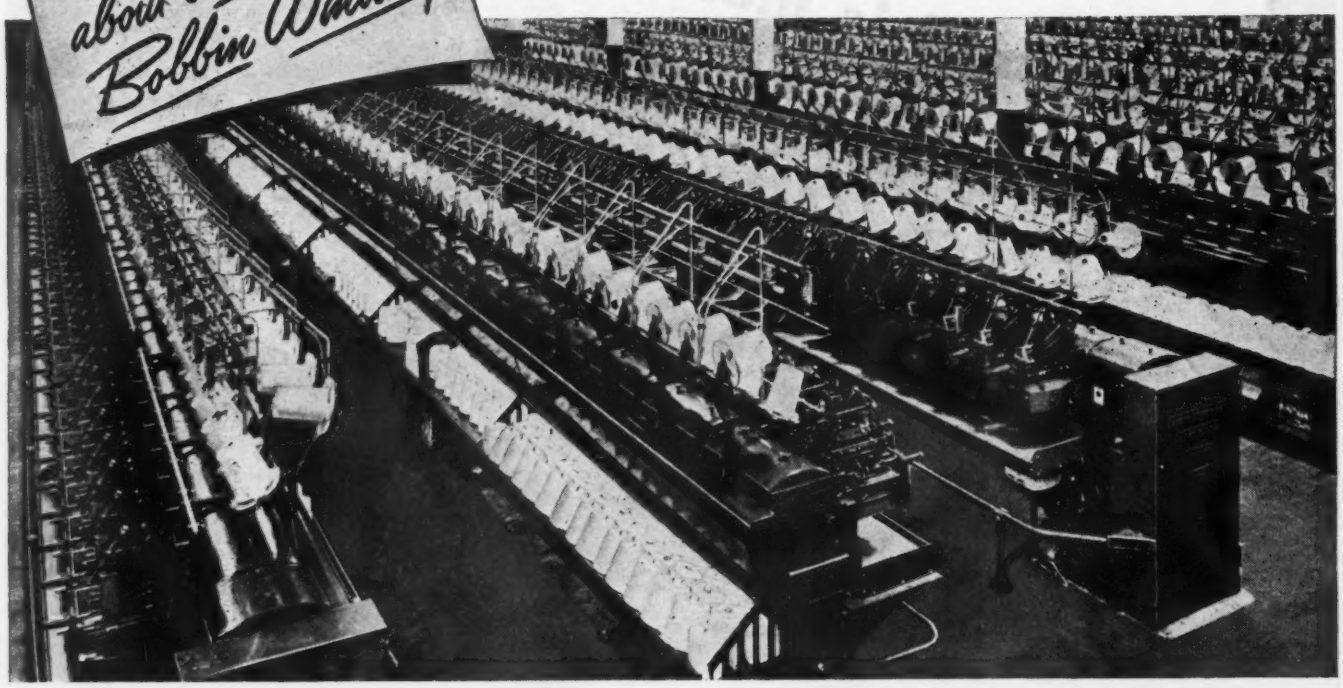
Showing construction of Westinghouse loom motor lubrication system.

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Loom Motors

Recommendations to any mill thinking about Automatic Bobbin Winding

LOOK FOR ALL 3



All 3 Features of Successful Automatic Bobbin Winding are Combined in the UNIVERSAL AUTOMATIC Alone!

Mills experienced in winding loom bobbins on automatic machinery will undoubtedly agree that complete success—highest production, lowest maintenance, most satisfactory quality—cannot be obtained without these 3 features:

1 positive drive, through gears
2 a combination of mechanical *and electrical* controls
3 a yarn traversing method building parallel-sided bobbins

MAXIMUM PRODUCTION. On the Universal Automatic, all spindles are gear-driven from a rotating shaft. With slip eliminated, there is no loss in speed between shaft and spindle.

SIMPLICITY OF MAINTENANCE. Use of electrical controls for various machine functions simplifies design, eliminates friction, and reduces opportunity for wear and breakdown.

QUALITY WINDING. The unique Universal Traverse Wheel produces bobbins which are round, parallel-sided and free from ridges which cause plucks.

Other Important Universal Features. "Layer-lock" wind, reducing tendency to "shell off" in the shuttle. Centralizing bobbin driver. Automatic release of tension at start of winding. Magazine creeling. Single gear adjustment for changing number of winds. 9½" maximum traverse, 1½" maximum diameter.

The UNIVERSAL AUTOMATIC has proved successful over a period of years winding rayon yarns for the loom. Orders for after-the-war delivery are now being accepted for winding all fibres.

UNIVERSAL AUTOMATIC
High Speed Bobbin Winding Machine

UNIVERSAL WINDING COMPANY

... Putting Electricity to Work to Improve Your Bobbin Winding

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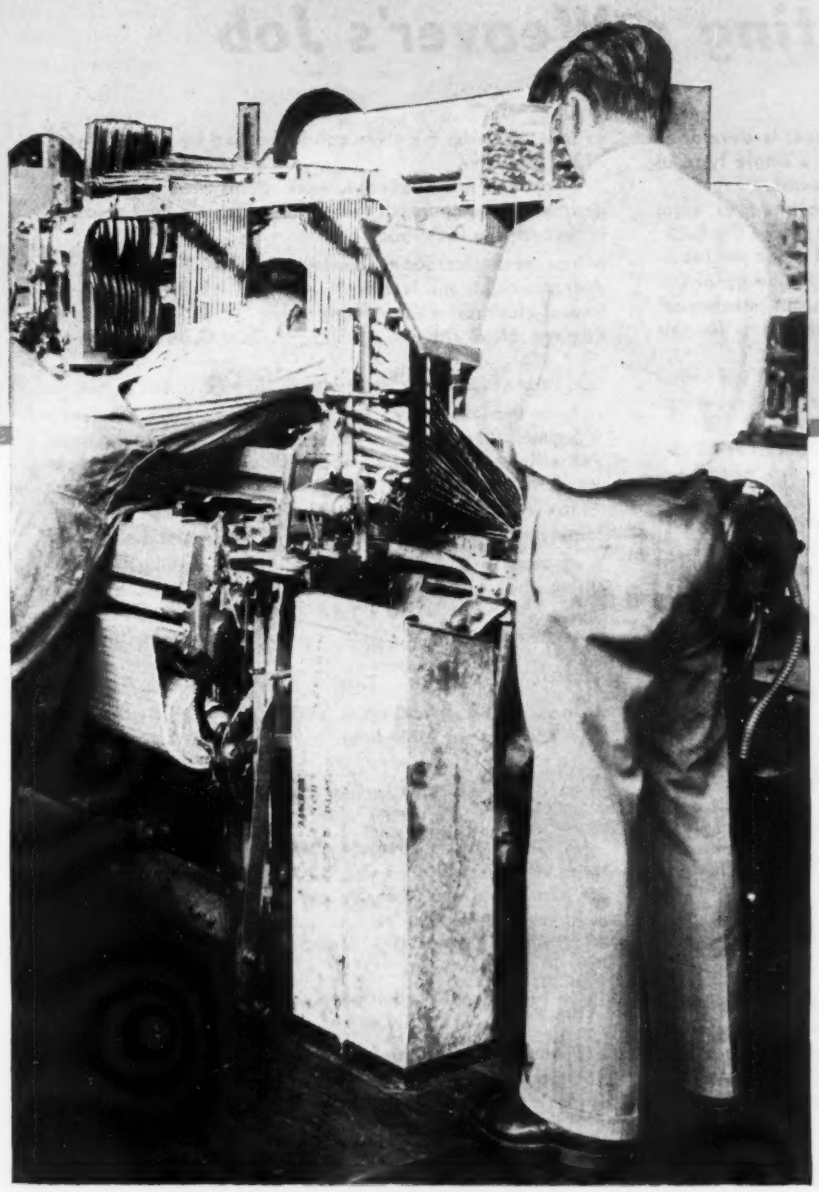
WAGE INCENTIVES

Aided by Today's More Accurate Control

HIGHLIGHTS: Plan Given Here Uses Hourly Rate, Yet Extra Production Permits More Pay — Mill Laboratory Provides Basic Information—Method Has Wide Application — Time Units Are Essential Parts.

By **WILLIS M. FANNING**
Vice President, Albert Ramond and Associates, Inc.



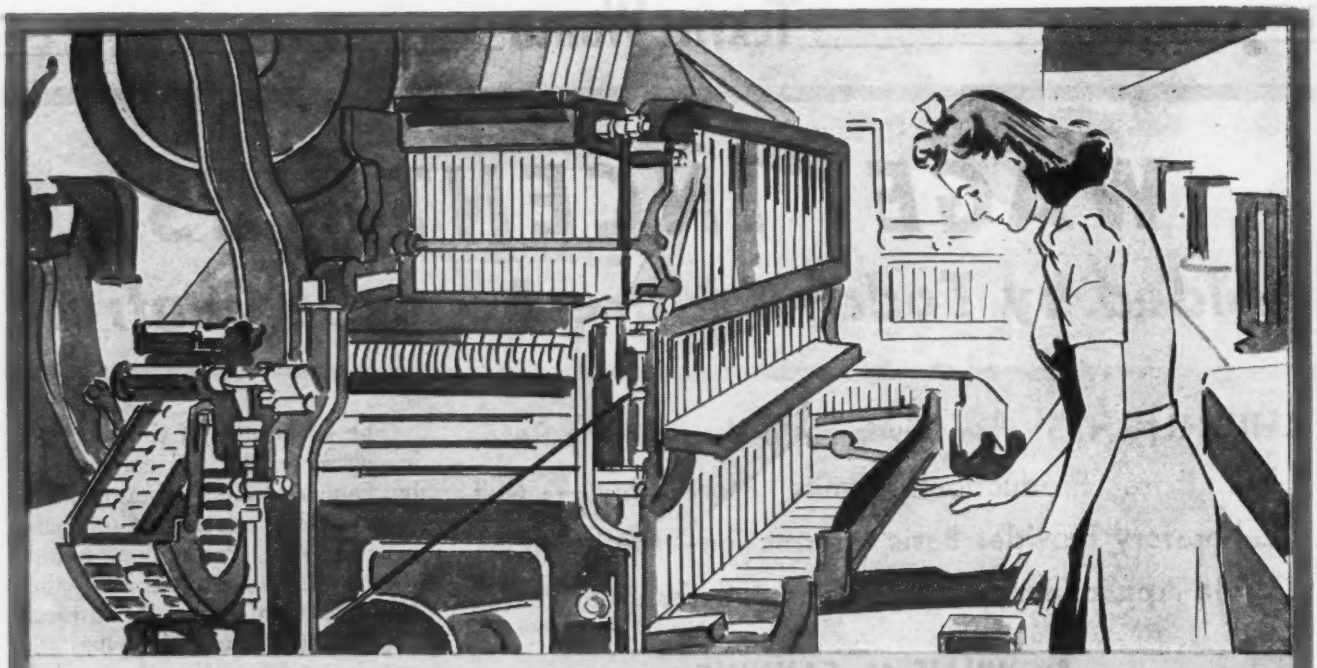
The seriousness of the shortage in cotton textiles was emphasized by Donald Nelson recently at a Washington meeting of officials of the War Production Board with textile representatives of the National Conference of Business Paper Editors. Incentive plans are one device for getting the needed increase and, as stated by Mr. Nelson at the meeting, there should be "no difficulty getting the War Labor Board to approve any wage-incentive plan . . . based on increase in production."

The plan presented here is one type that should increase production and could be installed in a very short time if necessary mill figures are available. It goes right to the heart of the reason for the shortage: inadequate production from machines in place.

MANY MILLS have long used a plan of payment by results, at least in some departments. In recent years, however, has come widespread recognition of the need for modernizing and improving the plans so that the standards are based on accurate knowledge of the specific conditions and the workers are able to share in the benefits of increased efficiency.

Because of expanded laboratory functions in many mills, more definite information is available with regard to standard procedures and work assignments. Furthermore, as a result of the constant checking, it is now possible to maintain the standard work conditions which permit the setting of definite work assignments corresponding to these conditions.

Thus, improvements in the calibre of mill operation have helped promote the introduction of incentive plans by providing the basic requisites for such plans. Conversely, incentive



Calculating a Weaver's Job

The following weaver's standard assignment is developed for a single style of cloth, one width, on a single type of loom, with all looms running at the same speed.

The weavers' work procedure is established as eight patrols per hour, six on the front side and two at the back.

Loom stops show a range of 1.2 to 1.8 stops per loom-hour. The average condition is 1.5 stops, made up of 0.6 stops warp, 0.6 stops filling, and 0.3 stops mechanical faults. The number of warp ends per warp stop for this cloth style is 1½ ends.

Assuming eight patrols per hour and 1.5 stops per loom-hour, then 8 minus 1.5 equals 6.5 passes with inspection and 1.5 equals the number of stopped looms.

To fix a warp-end break and to start the loom takes 40 sec. At 1.5 ends per warp stop, this makes 40 x 1.5, or 60 sec., per stop.

To fix filling break, average condition per stop — 20 sec.

To fix fault, check and start per stop — 20 sec.

To inspect loom while running — 5 sec. on patrol.

To pass around stopped loom — 3 sec.

The patrolling credit thus becomes 6.5 x 5, or 32.5 sec., for inspecting loom; and 1.5 x 3, or 4.5 sec., for passing around stopped loom. Allowing 20% as the fatigue factor, the time standard may then be figured as follows:

$$\text{Warp} - 60 + 32.5 + 4.5 = 97.0 \times \frac{120\%}{60} = 1.94 \text{ stan.-min. per stop}$$

$$\text{Filling} - 20 + 32.5 + 4.5 = 57.0 \times \frac{120\%}{60} = 1.14 \text{ stan.-min. per stop}$$

$$\text{Fault} - 20 + 32.5 + 4.5 = 57.0 \times \frac{120\%}{60} = 1.14 \text{ stan.-min. per stop}$$

The values are divided by 60 in order to change seconds into standard-minutes or B points. It should be noted that the fatigue factor of 20% (as well as the fatigue allowances of 15% for battery hands and 10% for loomfixers given elsewhere) are largely determined by the past experience under the given conditions and by the judgment of the engineer.

There are miscellaneous work items that the weaver performs in the course of the patrols which are here credited in seconds per loom-hour.

Minor mechanical loom adjustments	10.1 sec./loom-hr.
Adjust weights and temples	1.8 sec./loom-hr.
Inspect cloth roll while running	3.1 sec./loom-hr.
Remove roll of cloth	3.0 sec./loom-hr.
Total seconds per loom-hour	18.0

From the laboratory's loom-stop studies, loom efficiency is found to be between 85 and 90%. Since loom stops and efficiencies are not precise, a band or spread of from 85 to 90% is used.

The next step is to develop the number of standard-minutes per M-picks per loom, by stops per loom-hour.

Warp stops	.60 x 1.94 =	1.16 stan.-min./loom-hr.
Filling stops	.60 x 1.14 =	.69 stan.-min./loom-hr.
Faults	.30 x 1.14 =	.34 stan.-min./loom-hr.
Miscellaneous		.36 stan.-min./loom-hr.
Total		2.55 stan.-min./loom-hr.

A loom speed of 160 r.p.m. and an 85% efficiency gives 8.16 M-picks per loom-hour.

$$\frac{2.55}{8.16} = .31 \text{ standard-minutes per M-picks}$$

Assuming that a competent weaver is producing at 90% loom efficiency and earning 33% above standard, which is 80 standard-minutes of pay per hour, the following loom assignment is made.

160 r.p.m. x 60 x 90% = 8.64 M-picks per loom-hour

$$\frac{80}{8.64 \times .31} = 30 \text{ looms per weaver}$$

Production is reported per shift per loom on a pick sheet. The total number of picks produced by a weaver is recorded for pay purposes. (See Computing Earnings.)

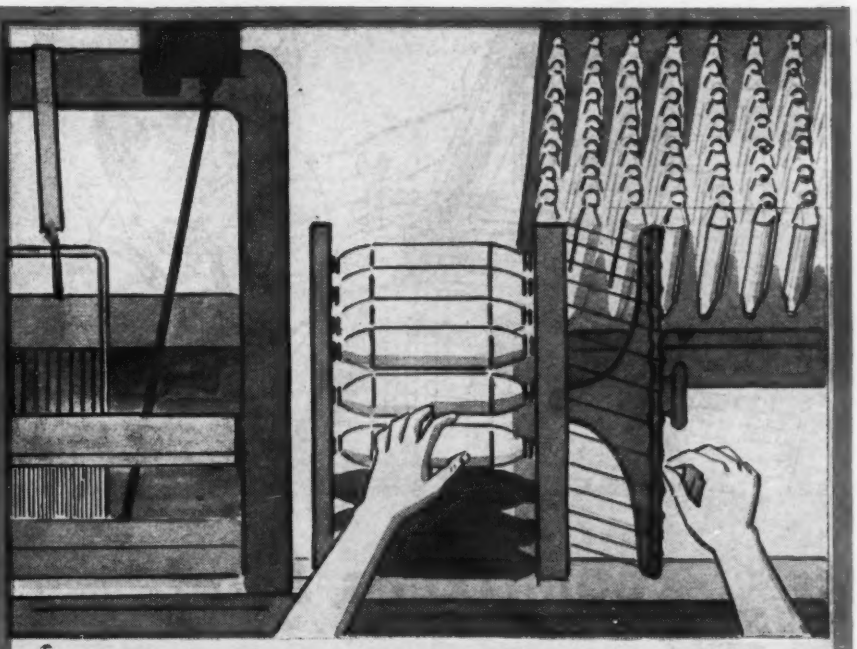
wages have been a helpful factor in raising and maintaining standards of efficiency in respect to both work assignments and machine efficiency.

RECENT SURVEY. That correctly designed wage incentives tend to make for higher labor performance and machine efficiency is proved by the experience of many mills that have installed such plans. It is confirmed indirectly, also, by government surveys that show greater earnings for workers on incentive pay, thus indicating a higher rate of production per man-hour. A recent survey by the Bureau of Labor Statistics of the Department of Labor was summarized in the Monthly Labor Review for May, 1943. The survey in the cotton-goods industry took in 251 mills, employing approximately one-fifth of the workers in the industry, and included all the important cotton-goods producing areas. About 42% of the workers studied were employed under some form of incentive wage plan. In southern mills the differential in favor of incentive workers averaged 17.3%, while in northern mills the advantage was 10.3%. In one-third of the occupations in southern mills, incentive earnings exceeded timework earnings by from 20 to 30%.

An incentive plan by itself does not automatically bring about increased productivity. Theoretically, if the same efficient operating conditions could be maintained on straight time, or on piecework, it would be possible to get equally good over-all results. It is a fact, however, that incentive plans are more likely to stimulate management to provide the standardized conditions and the continuous checking and correcting that are necessary for efficient production. Incentive wages are thus a valuable aid to good management, though definitely not a substitute for it.

FAIR AND SCIENTIFIC. It is now rather generally understood by management that a plan to be workable must be both fair and scientific. The incentive method of payment not only rewards the more willing and capable workers but provides protection through work standards that are accurately established and remain unchanged unless the conditions change. In addition, these plans, contrary to some of the old piecework arrangements, provide for payment of the guaranteed minimum base rate, regardless of performance.

To get the workers' agreement on the standards, the procedure involved in the time studies and the reasons for each step must be carefully explained.



Battery-Hand Assignment

The development of the standard for battery hands, beside the time study of the work involved in placing bobbins in the battery, must take the following three factors into consideration:

1. **The yards of yarn per bobbin, differs for each size bobbin and yarn.**
2. **The length of time that a bobbin will last, which is controlled by loom speed, width of cloth, and efficiency of loom operation.**
3. **The frequency with which the battery hand must return to refill the battery. Consider that 10 bobbins are placed per trip.**

For this example, the width is 32½ in. or 0.9 yd., loom speed is 160 r.p.m. Size of bobbin: 8-in. containing 700 yd. of yarn.

Development of the standard for 10 bobbins placed from battery-hand truck passing between looms follows:

A. Place 10 bobbins in battery

$$49.3 \times \frac{115\%}{60} = .946 \text{ standard-minutes per 10 bobbins}$$

B. Push truck to next loom

$$6.0 \times \frac{115\%}{60} = .115 \text{ standard-minutes per 10 bobbins}$$

C. Time for loading small truck with bobbins from spinning room

$$3.6 \times \frac{115\%}{60} = .069 \text{ standard-minutes per 10 bobbins}$$

Total 1.13 standard-minutes per 10 bobbins

$$\text{per bobbin } \frac{1.13}{10} = .113 \text{ standard-minutes}$$

8-in. bobbin at 700 yd. ÷ 0.9 per pick gives 777 picks per bobbin

$$\frac{.113 \times 1000}{777} = .145 \text{ standard-minutes per M-picks}$$

Considering the efficiency at which the looms are expected to operate, and that the experienced battery hand will carry an incentive assignment of 33% above standard, the following assignments are listed:

Efficiency	Picks per Hour	Standard-Minutes per Loom-Hour	Loom Assignments
100%	9.6 M-picks	1.39	57 looms
95%	9.1 " "	1.32	60 "
90%	8.6 " "	1.25	64 "
85%	8.1 " "	1.18	68 "
80%	7.7 " "	1.11	72 "

***Assuming 85% loom efficiency, the battery hand on 8-in bobbins will service 68 looms. On the pick sheets of the same shift the battery hand's production in M-picks is recorded for pay purposes. Pay is determined by multiplying the number of M-picks produced by .145 standard minutes, which gives the number of minutes for which the battery hand is paid.**

Loomfixer's Load

The development of standards for loomfixers requires considerable operating information and the establishment of a planned-work procedure. The question as to what, if any, types of loom repairs are to be handled by rebuilding or repair men should be decided. In considering loomfixing as a productive job, main emphasis must be put on preventive work — the maintenance of quality and high efficiency of operating — rather than on the task of rebuilding or repairing the machines when they stop.

The amount of work the loomfixer does in warp changes and start-ups varies greatly between mills. This must be set up on a definite basis. Repairs the loomfixer will handle must be studied in order to determine both the work involved and the frequency with which the repair occurs. The patrolling frequency for preventive work by the loomfixers must be established. Time studies are then made on the patrolling and the preventive work per loom-hour.

Once these points are decided and the exact work procedure is established, the following shows the development of the loomfixer's standard per M-picks and the number of looms for a loomfixer's assignment, assuming 85% efficiency, loom speed 160 r.p.m., patrolling once per hour, and a definite running time for a warp:

A. (1) Patrolling all looms in assignment on an hourly basis

$$3.0 \times \frac{110\%}{60} = .055 \text{ standard-minutes per loom-hour}$$

(2) Adjustment to loom (not repairs) considered as preventive maintenance

$$16.0 \times \frac{110\%}{60} = .293 \text{ standard-minutes per loom-hour}$$

B. Warp change (165 loom-hours for this warp)

$$\frac{600}{165} \times \frac{110\%}{60} = .070 \text{ standard-minutes per loom-hour}$$

C. Repairs and replacements of parts on a definite frequency schedule (not detailed here) .382 standard-minutes per loom-hour

Total .800 standard-minutes per loom-hour

160 r.p.m. x 85% = 136 x 60 min. = 8.16 M-picks per hour

$$\frac{.80}{8.16} = .098 \text{ standard-minutes per M-picks}$$

Assuming that a competent loomfixer will carry an incentive assignment of 33% above standard which is 80 min. of pay per hour, the following loom assignment is made.

160 r.p.m. x 60 x 90% = 8.64 M-picks per loom-hour

$$\frac{80}{8.64 \times .098} = 94 \text{ looms per loomfixer}$$

Production is reported per shift per loom on a pick sheet. The total number of picks from the machines serviced by a loomfixer is recorded for pay purposes.

The plan must be reduced to its simplest terms so that the ordinary worker will have no difficulty in understanding it and in determining exactly how his pay check is arrived at. Many otherwise sound plans have failed simply because management did not realize the importance of selling them properly to the employees. The favorable psychological effects of consulting workers on matters affecting their interests cannot be overestimated. So far as practical, it is advisable to include indirect workers and supervision in the incentive program. This can usually be done.

CLERICAL WORK. Setting up and maintaining a wage plan based on exact standards naturally require correspondingly accurate timekeeping and records. Experience shows, however, that any additional clerical work that may be involved is of little significance when measured against the savings derived. It has been found, also, that when the necessary explanations are given, the average worker has no difficulty in understanding the forms and the simple pay calculations involved. It must be remembered that the information compiled as part of such a plan has many uses aside from serving as the basis for determining the amount of extra pay. The production standards are often used for cost-control, cost-determination, and for planning and scheduling programs. They thus provide the basic facts that are indispensable for good management.

The way these principles and practices are applied is indicated in the examples given. They show how production standards are set for three basic weave-room employees: weavers, loomfixers, and battery hands. The examples and figures are merely illustrative and do not necessarily relate to an actual weave room.

The first step is the analysis of operating conditions. The work procedure for the operators must be decided upon and put into practice. Preventive work is a very important factor. The laboratory personnel must be in a position to furnish continuous tests as to loom stops per hour by cloth style. Conditions as to warp changes and cloth doffs must be standardized and cleaning practices fixed. The resulting findings are then developed into the expected loom efficiency as represented by these conditions of operation.

Time study of the work procedure is then made, taking into consideration loom layout, size, type of looms, patrolling procedure; also variations due to style of cloth, warp ends per inch of reed, and loom speeds.

In analyzing the calculations shown in this article in establishing work assignments and determining the pay of the operator, it should be kept in mind that a performance of 60 standard-minutes per hour represents a work requirement corresponding to the guaranteed base pay. For such performance no bonus or premium above the base is paid to the operator for his work.

The standards described are so established that a good operator, under proper supervision and provided with adequate material and equipment, can produce at a rate approximately one-third above the standard without undue effort. For this additional productivity above the standard, the worker is paid a bonus corresponding to the performance.

STANDARD-MINUTE. Standard accomplishment may thus be regarded as the minimum expected in return for the guaranteed base rate of pay. Production above the standard is rewarded by extra pay. The standard-minute may be defined as the amount of work done in one minute by an operator working at the standard rate of accomplishment. In order to measure the amount of work done on different jobs, it is necessary to have such a common unit for measuring effective effort or productivity, which is applicable to various kinds of work done under different circumstances. The standard amount of work required to do a certain operation is thus expressed in so many standard-minutes, and the actual production is also credited in the same units.

In a cotton mill, production is limited by the machine cycle. Therefore, in order to provide the operator an opportunity to earn a premium of 33% above the base pay, the work assignment is calculated on the basis of 80 standard-minutes per hour. This procedure is followed in the examples here given to show how work assignments are arrived at for weavers, battery hands, and loomfixers.

In these examples it will be noted, also, that the number of standard-minutes per loom-hour or per bobbin is converted into standard-minutes per 1,000 picks (M-picks). By adding the number of picks registered on the pick clocks for the looms in a work assignment, there is obtained a total indicating the amount of work done by the operator during the shift. This can be expressed also as the number of standard-minutes accomplished. Dividing the total number of standard-minutes by 60 gives the number of hours to be credited to the operator for pay purposes.

Computing Earnings

The following example shows how the production of a weaver is recorded on the pick sheet and how his pay is figured under an incentive plan. Pay for battery hands and loomfixers is calculated similarly. Generally, pick clocks are of the double-dial type, so that at the end of the shift the recorder is turned to the other dial. The example given here is for a mill working two 8-hr. shifts.

PICK SHEET

Weave Room: Old Shed — **Pay Period**

Loom No.	Cloth Style	Speed	Clock Ratio	Clock Readings Shift	Start	Mon.	Tues.	1000 Picks Mon. 1	Mon. 2	Tues. 1	Tues. 2	Wed. 1	Wed. 2	Total
				1	110	179	249	69		70				
318	64/64	160	100%	2	316	380	447		64		67			
				1	846	912	984	66		72				
319	64/64	160	100%	2	509	576	641		67		65			
				1	716	767	834	51		67				
320	64/64	160	100%	2	828	893	959		65		66			
				1	234	301	368	67		67				
321	64/64	160	100%	2	972	040	106		68		66			
				1	876	941	006	65		65				
322	64/64	160	100%	2	914	982	049		68		67			
				1	216	285	353	69		68				
323	64/64	160	100%	2	242	310	379		68		69			

Using a work assignment for a weaver of 30 looms at 160 r.p.m. and a base rate of 63 c. per hour, the pay for an 8-hr. shift would be recorded as follows:

A report for the down time accompanying the pick sheet shows that two looms were stopped, waiting for warps, for 2 hr. and 1.3 hr., respectively, while a third loom was down 0.6 hr. because of motor trouble. This makes a total of 3.9 loom-hours down time. Since the assignment is 30 looms, the down time credit to the weaver is $\frac{3.9}{30}$ or 0.13 hr. (8 min.) for the shift.

From the pick sheet, production for the 30 looms is shown to be 2,077 M-picks, which at 0.31 standard-minutes per thousand picks gives a total of 644 standard-minutes. Adding the 8 min. credit for down time gives a total production credit of 652 standard-minutes. The pay for the eight-hour shift would, therefore, be:

$$\frac{652}{60} = 10.87 \text{ hours} \times \$0.63 = \$6.85$$

RECONVERTING Looms From Cottons to Rayons

HIGHLIGHTS: Adequate Preparation Speeds the Work — Definite System Insures Better Results — Race Plate and Take-up Coverings Among Items Changed.

By H. E. WENRICH

ONE OF THE VITAL FACTORS in the reconversion of looms from cottons to rayons is the importance of being prepared. Waiting until the old cotton warps have run out and then making rayon remounts will result in many lost loom hours unnecessarily.

Time spent on going over an emptied loom properly will be more than compensated for in trouble-free running when new warps are mounted. To assure that the loom is checked, work tickets (Fig. 1) specifying certain important functions are helpful. Listed on the ticket are cleaning, greasing, and other tasks performed by floor-hands; checking take-up gears, shuttle, and important motions by the fixer; and a final check-over by loom inspectors or foremen.

Placing new parts on various motions during a warp-out should be done with judgment, as often a replaced part will complicate starting up new warps. Previous to overhauling, another chart (Fig. 2) should be furnished through proper channels, to indicate the warp number, quality, weave, picks, and filling yarn of the new warp. This loom remount chart should be posted in a conspicuous place within the weave shed so that floor-hands and fixers will be familiar with the new construction at least two days ahead of time. This method of advanced notification will enable them to start checking over the loom before the warp has run out.

On this chart the weave, pick count, and filling yarn advise the fixer of certain changes, so he will have on hand the necessary draft chain, pick wheel, and shuttles. The floor-hands will have on hand additional harness wires, pull-down springs, etc., if needed on the new job. The warp number will permit getting the right warp a few hours ahead of time, if possible. Floor-hands can also prepare the tie-in apron, because the cotton one cut off the loom should be pulled through the rollers and removed. Cotton throws considerable lint and waste strands; consequently the last cut should be removed so that take-up rolls and drum can be cleaned thoroughly.

Loom No. 214 Date 6/8/44
Quality out 60731 Quality in 4289

Check (Floor Hands)

- ✓ Clean loom
- ✓ Oil and grease
- ✓ Race covering
- ✓ Take-up drum covering
- ✓ Harness mounts and jack-eyes
- ✓ Whiproll correct height
- ✓ New warp in securely
- ✓ Harness correct height
- ✓ Floor area cleaned

Fixer (empty loom)

- ✓ Take-up gears checked
- ✓ Center stop motion checked
- ✓ Head jacks and combinations
- ✓ Weave chain correct
- ✓ Breast-beam bolts firm
- ✓ Knock-off satisfactory
- ✓ Rocker shaft firm
- ✓ Crankshaft bearings firm
- ✓ Shuttle boxes, binders O.K.
- / Reed bed correct
- ✓ Protector daggers checked
- ✓ Shuttles satisfactory

Fixer (new remount)

- ✓ Shuttle checking correct
- ✓ Warp drops satisfactory
- ✓ Brake stops correct
- ✓ Pick timed
- ✓ Shed timed
- ✓ Temples holding correctly
- ✓ Filling cutter satisfactory
- ✓ Bobbin change correct
- ✓ Weave checked
- ✓ Pick wheel 48 teeth
- ✓ Warp tension and let-off checked

Foreman's Approval M. L. Jones

Fig. 1. When the type of cloth is changed, use of checking cards is of greater importance. Final check-over should be made by the loom inspector or the foreman.

WARP-OUT PROCEDURE. Now that the cotton warp is woven out, the task of removing the old equipment and mounting a new rayon job takes place. To make a quick check and cleaning job, each loom should be followed in as near a methodical plan as possible. The only time to break away from a prearranged plan is when one person who is working on a certain part or motion conflicts with the work of another person. In such cases, changing the order is permissible. The following sequence is recommended:

1. Floor-hands remove old harness and warp beam.

2. Floor-hands clean all cotton waste from take-up rolls and gears. During this time, loom-cleaner washes loom around arches.

3. Fixer inspects race cloth and take-up drum covering. If new covering is required, the person responsible proceeds with job. (On cotton weaves, it may have been necessary to use sandpaper on the take-up drum. On the new rayon weave, covering required may be felt, cork, rubber, or other material suitable for prevention of "stars" and small holes.)

If drum covering must be replaced and the new replacement goes on spirally, the drum should be removed for recovering. At this time, all gears can be completely cleaned of any cotton waste wound around them or their shaftings.

When waste is removed from gear bushings and studs, the fixer has a good chance to inspect the intermediate gear and shaft for heavy wear. This gear must fit almost perfectly to prevent appearance of a certain type of barre defect.

On some cotton weaves, cotton spinning tape or other tightly woven fabric is used for race-plate covering. On most rayon weaves, the preferred

LOOM REMOUNT SCHEDULE

Loom	Warp No.	Quality	Picks	Weave	Filling
273	761	M-7680	80	6-Twill	Nylon Type 3
16	604	910	104	Satin	100 Dn. dull
308	1006	620	54	Tabby	150 Dn. Bright
410	762	M-7680	80	6-Twill	Nylon Type 3
94	763	M-7680	80	6-Twill	"
86	605	910	54	Tabby	150 Dn. Bright

Fig. 2. Posting a remount schedule in the weave room permits better planning of work.

covering is corduroy, billiard cloth, or plush. The new covering should be glued firmly in place and all rough edges should be smoothed off.

REED-BED ADJUSTMENTS. 4. While floor-hands are busy on their work, the fixer should inspect the reed bed. On solid reeds, lint should be brushed out of bottom reed cavity. If loom has a swinging reed, all springs, bolts, and other fastenings are temporarily removed and the reed swung upwards over race plate so that cotton waste and lint can be brushed out. At this time, inspect reed-adjustment plates and screws for breakage or wear. Also remove worn or rusty angle-iron screws and replace with slightly oversize screws.

On most rayon weaves, a swinging reed is a "must." It is important to adjust reed movement by bringing the lay to front-center, testing it for swing. If checking of the reed movement is left until a new warp has been started, the fixer may find it necessary to remove the reed bed and other parts, entailing extra work that could have been avoided. The fixer should inspect reed hangers and should replace worn swivels, springs, or other parts concerned with reed movement when the loom is running. He should see to it that all parts are lubricated.

5. The fixer checks over the head motion for broken jacks and other faulty parts. If the head is clogged with lint, it may be necessary to remove all jacks and other parts for cleaning in petroleum solvent. Otherwise, it is not advisable to remove any part unless broken or badly worn. This is another of those very important rules to follow, as a fixer can disrupt his entire section if several heads are causing trouble at the same time.

Finally, the fixer mounts the new chain and rolls it around to be sure that the fingers are working freely. He lubricates the head motion with a light non-fluid oil, not heavy grease, and inspects the harness jack eyes for wear, replacing those showing thin edges.

During this time, the loom-cleaner washes the loom between the lay and the breast beam, replacing the dirty paper usually fastened over the take-up drum as an oil-splash guard. The cleaner moves to the back as the fixer is ready to adjust the center stop motion.

FILLING-STOP MOTION. 6. On looms equipped with center stop motions, the importance of careful check-up cannot be over-stressed. The procedure can be as follows: Tighten bolts securing the stop-motion stand. If feeler wires are cut underneath, rub smooth with sandpaper and polish with emery cloth. If cuts are too deep, remove feeler wires and smooth on emery wheel before polishing. Check feeler wires for equal length.

Move lay forward, holding dagger shield up so dagger will strike in knock-off position. When dagger point is approximately $\frac{3}{16}$ in. from cam, test for correct height and adjustment. Hold feeler-wire stand so wires are flush with race plate, and with other hand move dagger up and down to check play in rod head and connector. The rod-head rivet may be worn, or the screw hole may be too large. Some fixers, not familiar with this rod and connector, place the removable rod head at the top, whereas this end should be fastened by riveting it to the dagger socket.

As there are numerous types of looms with a variance in dagger length, an approximate dagger length can be found by checking the position of the crankshaft with the dagger. The crankshaft should be set slightly back of bottom center when the dagger tip touches in the cam (brake tumbler) as it is ready for knock-off.

Next check the feeler-wire clearance by moving lay back center. Place shuttle beneath raised wires, and clear wires approximately $\frac{1}{4}$ in. above the front shuttle edge. Make adjustments by raising or lowering the lifter rod and moving the rod front or back in the stand slot.

SHUTTLE BOXES. 7. Check over pickers and replace badly damaged pickers. Remove rough pickers in order to shellac and polish them. Remove box guides, if necessary, for shellacking and polishing. If leather strips on binders swell or the tops or box mouth are rough, they should all be sanded, shellacked, and polished.

Check on binder pins and replace if worn. Check over transfer for rough edges. On multiple-shuttle looms, check and level boxes. Wear in box lifter-rod giveway stud must be removed. Boxes must work freely without too much play in guide grooves. If picker sticks show wear or picking is incorrectly timed, it is best to delay adjustment until a yard or more has been woven on the new rayon remount.

8. Cleaning should now be completed and floor-hands should be tying in a new warp. During this time or previously, the fixer can go over shuttles to be used. Usually, when changing from cottons to rayons, a different type of shuttle is required on both non-automatic and shuttle-changing looms. On bobbin changing, the eyes or yarn guides are usually changed, because those for rayon have a slightly different tension or a different metal composition. If the same shuttles are used, new and heavier fur will be required. After removing fur, scrape out all hard glue. Sand off rough spots on the shuttles and straighten back and bottom.

Smooth the outside of the shuttle and the shuttle points. Cotton yarn will take considerable punishment from rough shuttles, but rayon yarn is likely to be chafed and broken if shuttles are not perfectly smooth and polished. After replacing fur and after glue has set, sand shuttles along the upper edges and re-polish. The method of refurring after polishing prevents getting shellac on the upper strands of fur.

After the new rayon warp has been started and the apron has woven around the take-up rolls, the apron can be removed. Finally, the section foreman should check over the running rayon loom.

Mill Technicians Can CONTROL Cotton Fiber

HIGHLIGHTS: Hertel Fibrograph Furnishes Valuable Data—Pressley "Flat Bundle" for Fiber-Strength Determination More Widely Used—Character Standards for Type Cotton Should Be Set Up.

By A. C. WALTERS

THE IMPACT of the so-called "fibers of the future"—the synthetics—upon cotton manufacturing has necessitated not only a knowledge of these fibers, but also a more comprehensive and technical knowledge of cotton itself.

The trend is toward more research and more highly technical knowledge, and undoubtedly the majority of cotton mills will find it necessary to continue and to broaden their programs of technical testing and control over their processes in order to meet the demands of a market which will return to keen competition.

Since the synthetics, with their controlled length and diameter, have invaded the field formerly monopolized by cotton, there has been increased effort made to learn as much about cotton as the manufacturers of synthetics know about their products. Hence, the testing of cotton fibers has taken on a new importance to mill men.

The program given in this article for maintaining a constant check on cotton fibers is only a broad outline. Variations must be made to suit individual needs.

CLASSING PRACTICE. Distinct qualities of cotton that are generally recognized are the following: (1) staple length, (2) grade, (3) color, (4) character. (But the length distribution of the fibers, fiber strength, fiber fineness, fiber maturity, and variety all contribute to the character of the cotton.)

The grade and color are determined by visual comparison with boxes of samples known as the Universal Standard for Cotton, made up by the U. S. Department of Agriculture. As the determination of color entails very delicate distinction between minutely varying shades, it requires the eyes of a skilled cotton classer and a light which never varies. The type of light generally used is daylight which enters the cotton classing room through a skylight specially designed to allow light to enter only from the northern sky. Some mills have used artificial lighting in their cotton-classing rooms to advantage.

It would seem that a good procedure for the mill's laboratory technician would be to take pictures of samples from bales he intends to test. Such photographs might be good for comparison, since they reveal, more clearly than the eye, the leaf and trash in a sample of cotton. They also would make possible a permanent visual record of test specimens.

STAPLE LENGTH. There are a number of ways in which the length of fibers is currently expressed. Of primary importance, of course, is the classer's length. Of more importance toward the accumulation of technical data for control is the determination of what is known as the "upper-quartile" length, or the length at which the upper 25% by weight of the fibers occurs in an arrayed test specimen.

To make a fiber-length array, a cleaned homogenized test specimen weighing 75 milligrams is carefully laid by fingers and depressor on one set of combs of the Suter-Webb duplex cotton-fiber sorter (Fig. 1). After proper combing, the fibers are laid in separate length groups on a velvet board and then they represent a "fiber array."

Beginning with the longest fibers laid down, the lengths of various deposits are measured, and the deposits are raked into groups so that the range of fiber length shall be $\frac{1}{8}$ in.

The several length-array groups are weighed on a torsion balance. From these results a "cumulative-frequency curve" can be drawn on graph paper, showing the percentage, by weight, of all fibers longer than any given length. From the length array the following

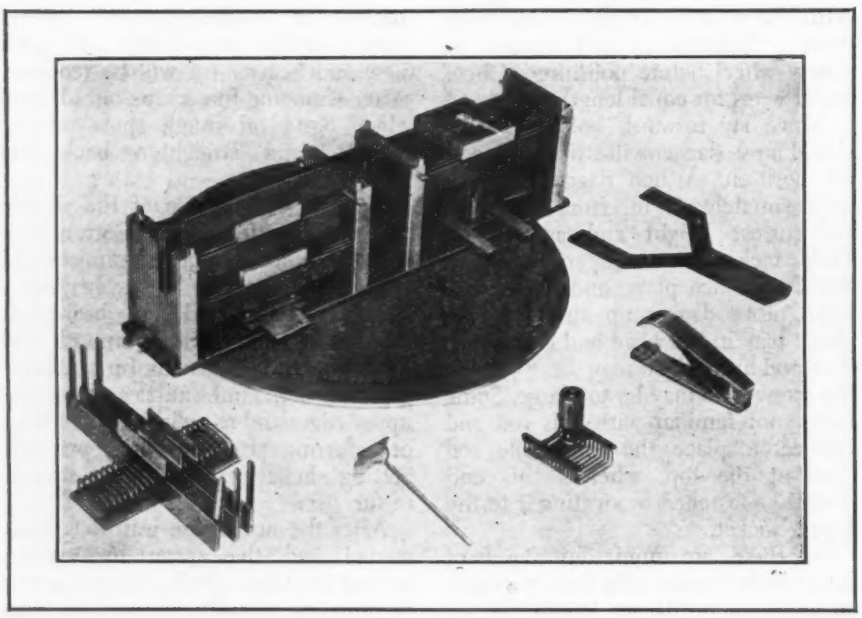


Fig. 1. The Suter-Webb duplex cotton-fiber sorter shown is valuable in determining the qualities of a staple.

data can be obtained: the 25% point of the array or "upper-quartile" length, the mean length, and the coefficient of variation.

The "upper-quartile" length is usually slightly longer than the staple length; and, from tests of more than 700 different samples of upland cotton, it has been found to have the following average relationship to staple length as determined by the classer:

Classer's length (inches) = .1942 + .7090 x upper-quartile length (inches).

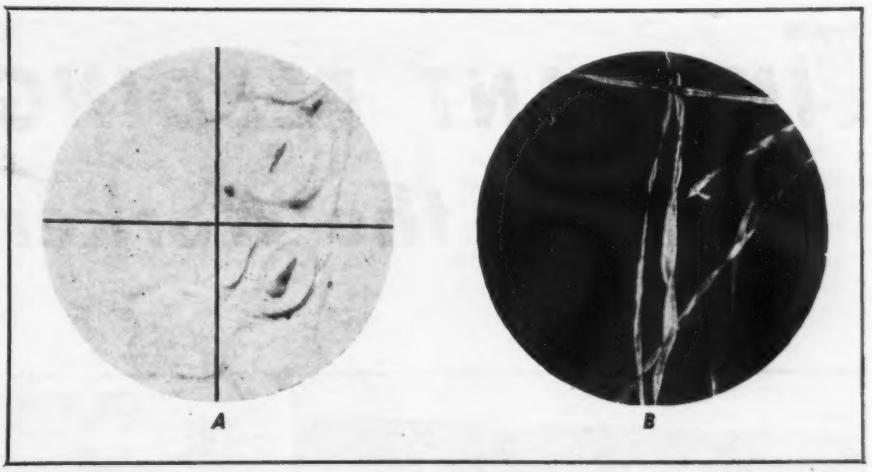
In contrast to the classer's length, this upper-quartile length is affected by the weight, or concentration, of the various fiber lengths appearing in the test specimen. Naturally, a direct influence upon the weight is caused by such qualities of the cotton fibers' as diameter and maturity — qualities ignored or roughly estimated by the commercial classer.

The mean length obtained from an array is the average length of all the fibers determined from the weight-length data. It is somewhat less than the length at the 25% point, and is used as a basis for the different measures of variability.

The coefficient of variation of fiber length, in percent, is a measure of the variability or lack of uniformity of the fibers in a sample. It is obtained by dividing 100 times the standard deviation of length by the mean length. For saw-ginned American upland cotton, the coefficient of variation of length usually falls between about 22 and 32%, averaging about 27%. A coefficient below 22% would indicate very uniform cotton; above 32%, irregular cotton. Difference in upper-quartile length greater than about 0.025 in. may be considered to be significant when the averages of 3 tests per sample are used.

FIBER LENGTH, FIBROGRAPH. In determining the fiber length with the Hertel Fibrograph (Fig. 2), 300 to 400 milligrams of cotton are drawn from a sample, and then mixed and straightened by combing on one pair of combs. The two combs with their fringes of straightened fibers are placed in the Fibrograph, where a beam of light passes through the fringe, beginning with the densest part, and gradually moves to the outer edge composed of the longest fibers. The light passes through the fringe to a photoelectric cell which registers voltage generated on a galvanometer. By means of a recording pen, a continuous curve is drawn on a card and information is obtained by analyzing this curve.

This device reflects the presence of fibers of varying lengths. The results it gives are directly affected by the diameter and maturity of the individual fibers, since these characteristics determine the density of a fiber and therefore retard light penetration.



The microscope is a tool used by the fiber technologist to determine maturity and fineness of cotton (A) and to count fiber convolutions (B).

In routine testing, two measures are obtained: (1) the mean fiber length, and (2) the "upper-half mean" length, which is the average length of all fibers longer than the mean. The upper-half mean has been found to be closely correlated to the classer's length, and comparison can be made by using the empirical formula following:

Classer's length (inches) = .238 + .823 x upper-half mean (inches).

By dividing the mean fiber length by the upper-half mean and expressing the quotient in percent, a practical measure of the variability of the fibers in the sample is obtained. This measure of uniformity will average about 76% for saw-ginned American upland cotton. If the value is 69% or less, it may be considered as an indication of irregular cotton; if 83% or above, the cotton is exceptionally uniform.

These two methods form a step toward the fusion of the length of cotton staple with the elusive quality of cotton we speak of as "character."

Fig. 2. Hertel Fibrograph employs photo-electric scanning head to determine fiber length and distribution.

CHARACTER OF COTTON. Unlike synthetics, where uniformity of the character of the filament or fiber can be maintained, cotton and other natural fibers show such a decided variation that each individual fiber is, in itself, a study. Such characteristics as diameter; maturity; tensile strength; convolutions; weight fineness; the presence of noils, neps, and motes; and the presence of natural oils all enter into a complete evaluation of the "character" of cotton and directly affect its spinning qualities.

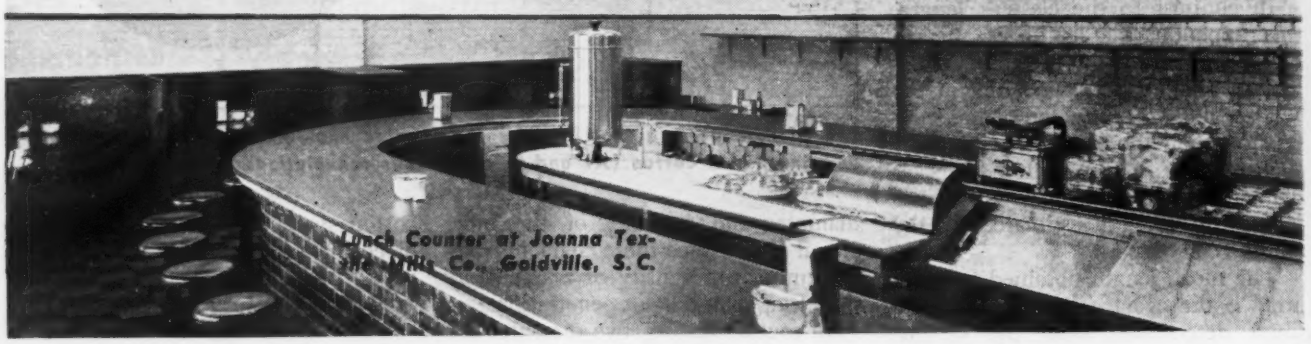
A series of tests are possible which will definitely reveal this character of cotton so that manufacturers not only can account for the poor spinning quality, but also they can be warned of the "poor character" before their manufacturing processes are stocked up with it.

Unfortunately, there is no standard for fiber character with which the technician can compare the results of his tests, as he can compare the breaking strength of yarn with the New Draper Standard, or the strength of fabrics with the Worth Street Acceptable Standards. The U. S. Department of Agriculture does issue the results of fiber tests made on various strains of cotton which give "standards" of comparison for character; but, due to marketing practices, a mill cannot always conveniently stick to one strain.

The best practice is for the mill's technical staff to make a study each year of each grade and staple length of cotton grown in the various sections of the states from which the mill buys its stock. Representative samples can be chosen and test specimens made up from them which will reflect the general character of cotton of a given grade and length, grown in a particular

(Continued on page 164)

IN-PLANT FEEDING Fortifies the Worker



Lunch Counter at Joanna Textile Mills Co., Goldville, S. C.

HIGHLIGHTS: Absenteeism Reduced, Morale Promoted, and Efficiency Increased by Feeding in the Plant—Assays of Vitamin Content Help Adequate Diet

By THOMAS O. OTT, Jr.
Southern Editor, TEXTILE WORLD

TEXTILE WORKERS are quick to respond to well-managed "in-plant" feeding programs that provide "fortifying" foods, well-balanced breakfasts, mid-shift lunches or suppers. During this emergency, management has been encouraged to institute such programs or, if started, to make them available to larger groups. It is becoming evident that safeguarding health, promotion of morale, and reduction of fatigue and absenteeism can be controlled to a large degree by proper nutrition. While excessive claims may be made that proper diet furnished in well-managed industrial cafeterias can cure most of the industrial friction of the emergency, in-plant feeding can actually do much to increase overall personnel efficiency over a long period of time. This is particularly true if an educational program to get people to eat the proper foods is included.

About 5,500,000 workers are now receiving "fortifying" rations and such rations should be available to 12,500,000 more in 1944, according to W. E. Broeg, program head, at the recent Chicago meeting of the Institute of Food Technologists. Absenteeism has noticeably decreased in the country's war plants, it is claimed, as a result of an industrial-plant feeding program developed by the War Food Administration.

The industrial-plant feeding program is designed to supplement the existing civilian rations in medium and heavy industries and to provide rationed and unrationed food which is not served at the worker's home. Among other provisions, a worker gets a healthy breakfast which "fortifies" him for work. His lunch is designed to promote better morale, resistance to ailments and accidents, and less absenteeism. Women workers respond to programs which provide a large number of green salads, yellow and green vegetables, fruit juices, and milk.

INDUSTRIAL FEEDING PROGRAM. This program involves the cooperation of many agencies. The Office of Distribution, WFA, has the responsibility for the development and general direction of the program; and, at Washington, coordination is achieved through the Inter-Agency Committee on Food for Workers. Members of this committee represent the War Food Administration, War Production Board, War Manpower Commission, Office of Price Administration, Maritime Commission, War and Navy Departments, U. S. Public Health Service, Federal Works Agency, and Federal Public Housing Authority.

The WFA industrial feeding specialists cooperate with labor and management in the installation and operation of on-the-job feeding services; assist with food, manpower, facilities, nutrition education problems; and certify as to the need for materials and construction for new industrial feeding installations.

The War Production Board prepares a program for materials, equipment, and supplies based on requirements submitted by the WFA and also takes priorities action for materials, equipment, and operating supplies. It cooperates with the WFA in devising methods for bringing into use second-hand and installed equipment not used to capacity. In addition, WPB cooperates with labor groups and procurement agencies in urging management's use of the WFA feeding specialists where inadequate feeding service is adversely affecting war production. WPB has announced a program whereby manufacturers of certain cooking and dishwashing equipment can step up their production in order to improve facilities for "in-plant" feeding of war workers, beginning July 1.

The Office of Price Administration determines the circumstances and methods under which rationed foods are provided for meals and for refreshments, and is responsible for con-

Left; Note milk and hot food being served at Mills Mill, Woodruff, S. C.

Below; Cafeteria at Fairforest Finishing Co., Spartanburg, S. C., furnishes workers inexpensive well-balanced meals.

trolling prices of meals provided.

The War Manpower Commission determines manpower requirements, and is responsible for the recruitment, training programs, and necessary steps to stabilize feeding-service employment.

Agencies, such as the War and Navy Departments and the Maritime Commission which have war contracts with industrial plants, cooperate with the WFA and WPB in obtaining feeding facilities for workers in these plants.

STARTING A PROGRAM. Feeding programs are instituted in industrial plants through the action of management, but this action may have been influenced by the efforts of plant employees, civic groups, and other community organizations as well as through the efforts of war agencies or plant owners and managers themselves.

Whether industrial feeding is undertaken by management or as a project by an organization or civic group, information obtained by them should be forwarded to the Regional Offices of Distribution, WFA, in Atlanta, New York, Dallas, or San Francisco. Industrial feeding specialists in the regional offices provide an advisory service without charge to the plant management. These feeding specialists make a complete survey within the plant, offer suggestions as to the type of foods and services needed, the equipment necessary to carry on an adequate feeding program, and give advice on menus, food problems, and nutrition education. WFA representatives also assist by providing radio scripts, posters, bulletins, and often material for conducting an educational program.

Like any human beings, textile workers have always liked to take a few minutes off for cold bottled drinks, salted peanuts, bars of candy, or packaged cakes. While this by no means condemns the vending-cart system with its refreshing snacks, such eating does not satisfy the nutritive needs of the worker as well as can be done by a well-prepared and well-balanced meal. These quick snacks, in a great many cases, take the edge off the appetite, with the result that the worker passes up the chance to obtain a meal that will sustain him. Women and office workers are prone to let these light inadequate snacks do until they get home.

Lunch boxes have been more evident since the advent of the 8-hr. day; and a nutritive well-prepared lunch is sufficient, especially if milk is used with it. In one mill cafeteria visited, workers were encouraged to bring their lunches to the cafeteria during lunch hour. There they often supplemented them with drinks and desserts. The trouble with lunch boxes is that they are often hastily and inadequately prepared, and many workers have the bad habit of eating something from their lunches at odd moments during the shift. Lunch boxes can be encouraged, but educational information on their proper planning and preparation should be made available to the worker.

Lunch counters which serve foods somewhat more elaborately than vending carts are in use in numbers of mills. Although a worker can get food such as milk, hot drinks, hamburgers, hot dogs, and sandwiches from them, he cannot get a proper diet if he patronizes these lunch counters every working day.

One mill visited, which has run two 10-hr. shifts since Pearl Harbor, shuts down for one hour at noon and allows the workers to return home for a mid-day meal. With such arrangements, members of a family from both shifts can eat together. This, at one time, was common practice in mills and has a great deal of merit. In addition, the plant mentioned operates a cafeteria where women and their families can get well-balanced meals at the proper time. This is especially useful to those families without domestic help—a situation more prevalent now than formerly.

Another mill without an in-plant feeding program has found it advisable to distribute a monthly meal-planning guide so that housewives employed at the mill can learn how to prepare more nourishing meals for their families. This mill distributes the *Health for Victory Meal Planning Guide*, published by the Home Economics Institute, Westinghouse Electric & Mfg. Co., Mansfield, Ohio, at a nominal cost to the worker of 5c. each—the company pays two-thirds of the cost of the bulletin.

GOOD CAFETERIA MANAGEMENT. Specialists, and not just "good cooks," must plan meals that appeal to the greatest number of workers and that contain the greatest nutritive value

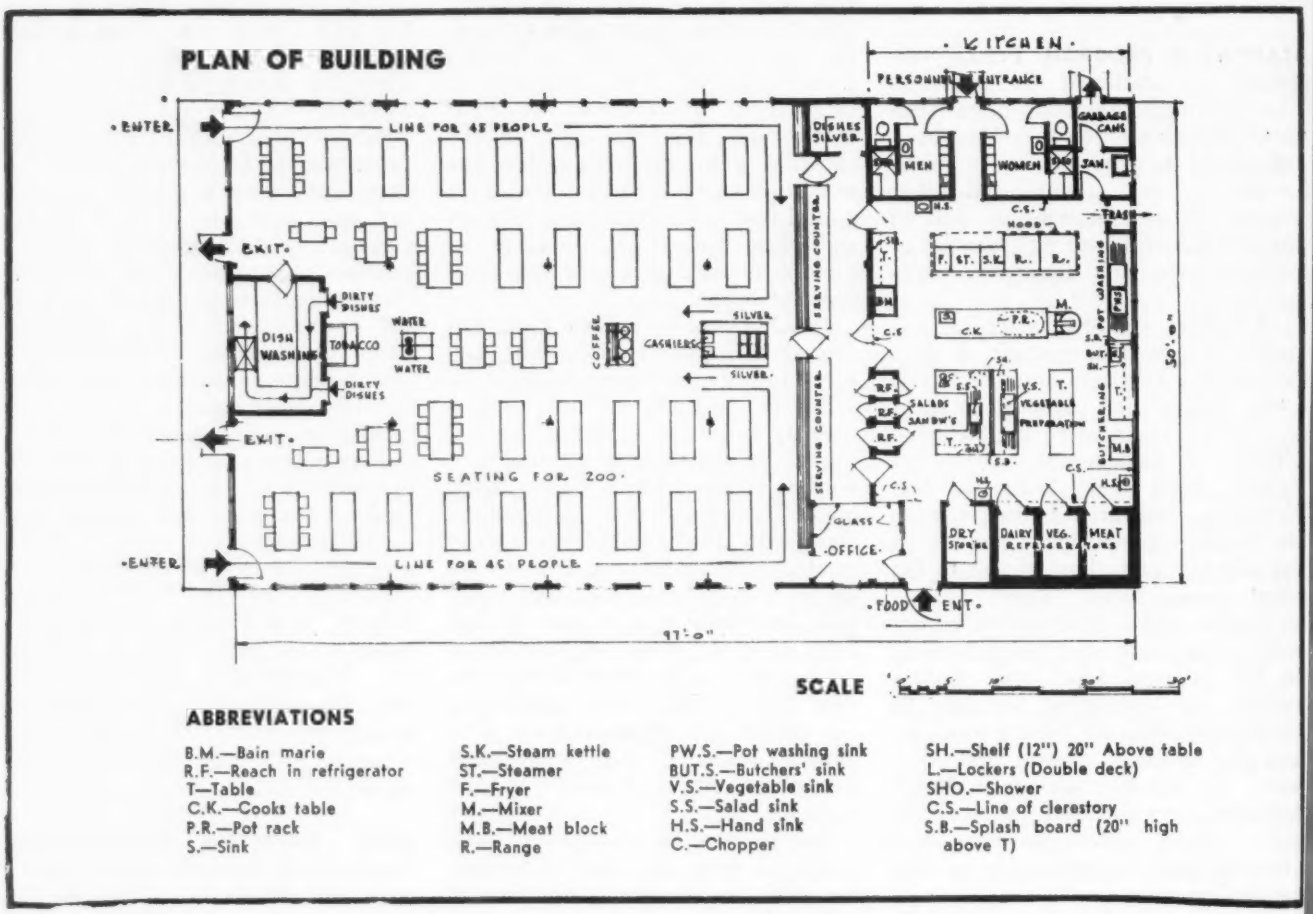
possible for the expenditure of money. Possibly, no profit should be made from "in-plant" cafeterias, and at times management should be prepared to make up losses. (One plant uses all profits for employee-welfare activities.) Some waste from cooking too much food is inevitable if workers are to be kept coming in for meals. In one mill visited, it was found by the superintendent that the number of people served had been reduced over a period of time due to not cooking enough to serve all comers; thus many that could not get a meal failed to return, especially if they could not be among the first served.

While it may not be practical now to get a nutritional specialist for every mill cafeteria, a competent "meal manager" should be secured and he or she should be encouraged to develop a knowledge of nutritive values of foods through study, attendance at institutes, use of pamphlets from government agencies, and magazines on the subject of nutrition. Home-economics teachers, doctors, and hospital nutritionists can furnish valuable advice. The plant physician can give much good advice and probably arrange for assays of the nutritive values of local foods and standard meals.

Travelling lunch wagon provides food for men on the job in a plant of Owens-Corning Fiberglas Corp.

RETURNS TO MANAGEMENT. The way to a worker's heart may not be "through his stomach," but management can win a great deal of goodwill by showing such a practical interest in the employees' welfare as to provide for well-balanced, tasty meals and time to eat them. When these things are not provided, there is no way to estimate the eventual damage done to a worker's health and the loss in efficiency and production—it is probably very great.

Plants that can provide attractive, sanitary, cool or well-heated eating places along with adequate food are making a very progressive step. The cost may seem high at first, but the returns are likely to be larger in both tangible and intangible ways.



Industrial-feeding specialists should cooperate with architects and engineers of the company that plans in-plant feeding. The layout of a plant cafeteria shown here provides a seating capacity for 200 persons.

QUALITY CONTROL Posts Mill-Production Odds

HIGHLIGHTS: Charts Indicate When Corrective Action Is Required—Limits Vary in Different Mills—Quartermaster Uses Control Methods for Inspection.

By Lt. Col. FRANK M. STEADMAN,
Philadelphia Quartermaster Depot

Courses are being offered to textile-mill executives by the Army Service Forces in an effort to help mill men assimilate statistical quality-control methods. Presented is an abstract of the speech delivered by Lt. Col. Frank M. Steadman before the Executives' Conference at Georgia School of Technology on June 21, at the opening of the new course entitled, "Quality Control by Statistical Methods." TEXTILE WORLD published technical data covering the use of quality-control charts in the December, 1943, and the January, 1944 issues.

EVERY MAN is willing to gamble a little occasionally; and if in his judgment he has a sure thing, he is just that much more ready to bet. Very few, however, are willing to lay themselves open to the charge of gambling with someone else's money. It just isn't done among good, honest business men! Or is it?

LIMITS OF CONTROL. The output of even the most carefully controlled machine will vary in as many respects as you attempt to inspect it, either by attribute (visual) inspection or by variables (measurement) inspection. The smaller the tolerances are, the closer the inspection and measurements must be; but the variation is still present. Unless you are wasting your firm's financial resources, those control limits are little or no closer than the engineering tolerances require.

A good judge of horses loses less at the racetrack. He isn't content with his own knowledge of horses. He consults and studies the records and adds as much to his knowledge of horseflesh as he can. A horserace has many variables, so it may very often not be "in control"; or on the other hand, they have been known to be too completely in control! However, the man who bets on horses recognizes that he is gambling and that he knows all too little about the variation in the process.

Without quality control you, as a producer or purchaser, are in the same position as the man who bets on a horserace—with one exception, the odds are not posted. Statistical quality control will give you the odds on which you wish to place your money, your manpower, your tools, and your materials. It will tell you at what level and with what variation you are operating and, more important, it will tell you *when* your process, tools, or materials change from that level and range of variability. When it tells you that, with your process in control with 3 Σ (sigma) control limits, the chances are only 3 in 1000 that the variation is due to extreme normal variation in the process, or that the odds are about 330 to 1 that your process is off, that you need to take corrective action, and that you will get a return for the money you put into corrective action. It will not tell you exactly what action is required. Your engineers will then apply their skill to the correction of the condition.

Possibly most important of all will be the change in outlook on your purchases or production, and the inspection of both. The dazzling light which statistical quality control throws on everything surrounding the characteristic being examined many times reveals startling facts, sometimes good, sometimes bad. You will be shocked out of your complacency. Your philosophy will change for the better. Variability will be recognized at a natural inherent characteristic of your production or, if you are buying, of the incoming material.

Having recognized that fact of universal variability, how is it used? Suffice to say that, having recognized it and having measured it, any values falling outside of the control limits, or further from the average than your 3 Σ limits, indicate that there are only three chances out of a thousand that the normal variation in your process could have caused such a wild value. That being so, you will look for trouble, needlessly, very seldom. But how about these points just inside the control limits? Shouldn't you start checking them? Not unless a trend or a shift of level is indicated, should a change be made in the process.

MEETING QUARTERMASTER SPECIFICATIONS. Specification requirements promulgated by the Philadelphia Quartermaster Depot are, in general, drawn upon minimum or upon maximum limits rather than on an average-and-tolerance basis.

In order, therefore, to meet consistently such Quartermaster Corps requirements, the average and variability of the manufacturer's production must be determined, the variability controlled, and the average held at 3 Σ for his production above the minimum or below the maximum specification requirements. The 3 Σ level will be different for every producer, since it is determined, not from the average or general level of production, but from the variability of his production. If his variability is great, then he must operate at a level further above the specification minimum limit than if his process was under close control. There is, of course, a degree of control to which it is uneconomical to go in attempting to move the production level nearer to the specification level. That point is the level at which any further tightening of the control would cost more than the savings possible in materials or in inspection costs. However, up to that point the only added work will be the preparation of the charts from the inspection or laboratory data already available.

VARIABLE SPEED Applied to Slasher at Three Points

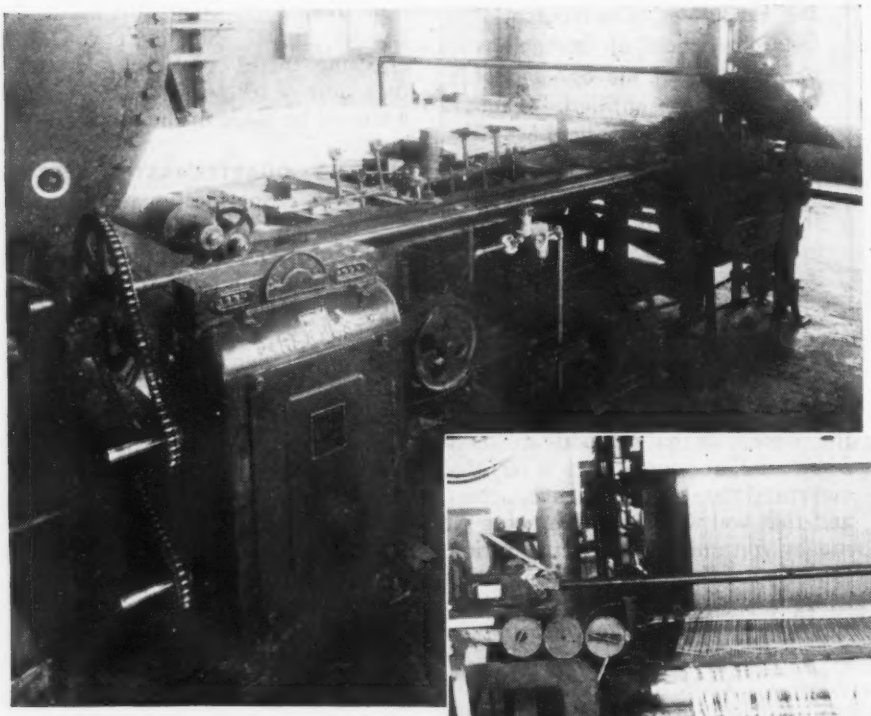
HIGHLIGHTS: Tension and Stretch Controlled—Yarn Elasticity Preserved — Beam Density Held Uniform — Improvement Noted in Weave Shed

IT IS GENERALLY AGREED among textile-mill executives that a large percentage of the warp yarns are damaged in the slasher operation to such an extent that the production of the weave room is adversely and materially affected.

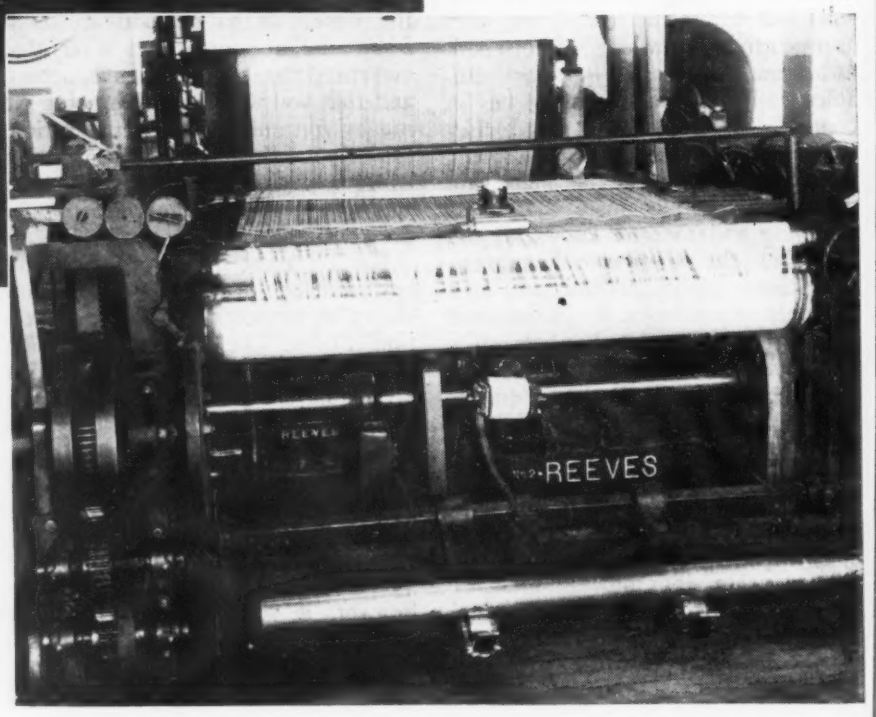
This was recognized long ago by the Tallassee Mills, Inc., Tallassee, Ala., and they decided to do something about it. As a result, they have recently installed special equipment that has proved to be a contributing factor in relieving many headaches.

Certain definite objectives were in mind—viz.: elimination of excessive stretch with its weakening of the yarn; control and preservation of uniform predetermined tension between the delivery roll and the loom beam throughout the building up of the beam, with the purpose of protecting the elasticity of the yarn and insuring a beam of uniform density throughout; and reduction in breakage of ends on the looms to improve both the production and the quality of the fabric.

To reach these objectives, accurate, automatically controlled variable-speed devices have been installed at the three critical points on the slasher.



Side view of No. 1 slasher, showing variable-speed transmission as applied for stretch control. Also shown is hydraulic-valve equipment which controls loom-beam drive.



Moist-O-Graph, follower roll, and variable-speed transmission for main drive and loom-beam drive. Loom beam has been removed.

All photos courtesy of Reeves Pulley Co.

MAIN DRIVE. The main slasher drives are Reeves transmissions having a speed range of 4 to 1, which enables the operator to obtain the correct speed setting for all sets from the lightest to the heaviest. Fine adjustments can also be made from time to time to keep the yarn from being wound on the loom beam too dry or too wet. These latter adjustments are necessitated by variation in the temperature of the cylinders, and by changes in atmospheric temperature

and humidity. Such speed changes are automatic.

Under normal operating conditions, the control of the percentage of regain in the yarn as it goes on the beam is entirely automatic and is held within extremely close limits yard by yard. This is accomplished by use of the Brown Instrument Moist-O-Graph, which measures the moisture in the yarn by electrical resistance and, through electrically operated mechanism, operates the adjusting screw of the No. 2 Class E Reeves transmission to increase or decrease the yarn speed as dictated by the detector roll. The controls are set for a predetermined percentage of moisture in the finished yarn as it goes on the beam.

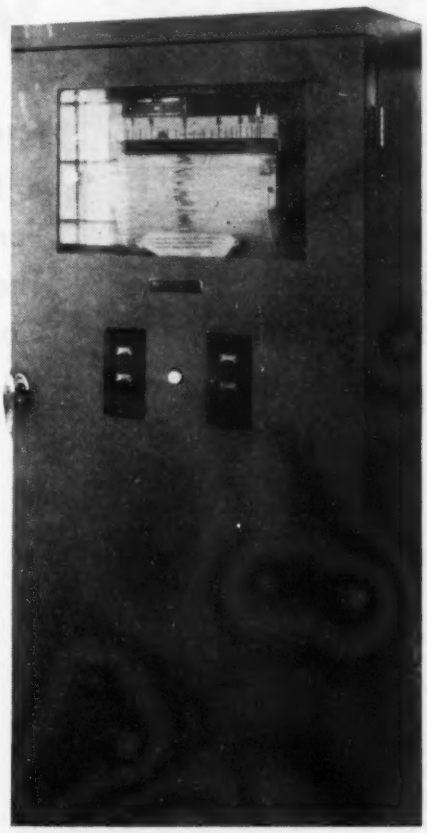
STRETCH CONTROL. The greatest yarn stretch in the slasher takes place at two points—between the size box and the cylinders, where the yarn is wet and the danger of excessive stretch is greatest, and between the delivery roll and the loom beam. Before the Reeves transmission was installed, the stretching of the yarn on the slasher averaged approximately 2½%.

Stretch is being accurately and continuously regulated and controlled by means of a small vertically enclosed Reeves variable-speed transmission driving the nip-rolls in the size box. A section was cut out of the original side shaft and additional bearings provided to support the free ends. Through sprockets and chain the side shaft drives the lower, or input, shaft of this device with a 3-to-1 step-up drive. The top, or out-put, shaft drives the size-box rolls, using a similar 3-to-1 reducing drive. By merely turning the speed-control handwheel, the r. p. m. of the nip-rolls in the size box are adjusted to give the desired tension and stretch of the yarn.

LOOM BEAM. The loom beam is driven by a separate No. 1 Class C (6:1) Reeves variable-speed transmission equipped with piston-type pneumatic automatic control. The loom beam was moved forward about ¾ in. to disengage the teeth of the gear in the friction from the large gear on the delivery-roll shaft. This controls the speed of the loom beam and maintains a constant yards-per-minute surface speed as the beam builds up in diameter, and the constant tension on the yarn results in a beam of uniform density throughout. The control may be set for any desired tension and remains the same until re-set. The operation of this control is automatic and leaves the slasher tender free to give his entire attention to the running of the yarn.

The hydraulic lever is directly connected to a small follower roll which bears lightly against the yarn on the loom beam. When a full beam is removed, the change to high speed is automatic and the follower roll moves immediately into position to contact the new beam which is installed.

By this system excessive slippage and undue heating of the friction are eliminated. This solves an annoying and expensive maintenance problem, as friction plates do not heat and the wear is reduced to a minimum.



Moist-O-Graph recording control panel, giving regain record. Control has been set for 7% regain.

Frequent tests indicate that this arrangement can be depended upon to reduce the yarn stretch in the slasher to 1% or less, and give as little or as much, as may be desired.

MOISTURE CONTENT. The Brown Moist-O-Graph used in connection with the variable-speed transmission insures a uniform moisture content in the warp being delivered by the slashers. The Moist-O-Graph is a direct-measuring instrument which employs the physical law that the electrical conductivity of yarn varies with its regain. This relation is such that the yarn weight or number of ends does not affect the accuracy of the measurement. A simple resistance-measuring self-balancing circuit is employed; and, since this resistance is constant, the instrument is calibrated directly into moisture content, thus enabling the operator to set the instrument for any desired regain.

The moisture content of the warps being slashed is dependent upon many factors. Among them are speed, temperature of the cylinders, temperature of the size, size-box level, tension, and atmospheric temperature and humidity. Many of these can be stabilized, such as cylinder temperatures, which are held constant by either temperature controllers or pressure controllers. These slashers are equipped with indicating pressure controllers which insure a constant steam pressure on the cylinders; the size box is controlled by a temperature controller together with a size-level control.

Since speed is a factor which has the greatest effect, and is also the variable with the greatest range, the Moist-O-Graph takes advantage of this and employs speed as a means of controlling the final moisture content of the yarn.

There are many advantages in using a direct-reading moisture control. In the slasher room these advantages are reflected by increased slasher production, due to the fact that an operator, when manually running a slasher, has a tendency to over-dry yarn, since it is necessary for him to be on the safe side to prevent running wet warps. With a moisture controller, the slasher is always run at its maximum drying capacity without the danger of running wet warps, since the instrument measures the moisture instantaneously and corrects for any condition that may arise.

WEAVE ROOM. The real advantages to controlling the moisture content to a predetermined percent are reflected in the weave room. Since every warp going to the weave room will have the proper moisture content, it is possible to run lower humidities in the weave room, as it is only necessary to maintain this moisture and not being necessary to add moisture to the warps once they have been brought to the weave room. Since the warps have not been over-dried, much shedding and chafing in the loom are eliminated. Weave room efficiency is increased and a more uniform fabric made.

"We are satisfied," said T. H. Floyd, superintendent of the mills, "that this equipment, as applied to our slashers, is a contributing factor to the very decided increase in our loom production."

The installation described points to improvements that can be made as production of equipment is resumed.

Check EYEBROWING to Better Your Yarn

HIGHLIGHTS: Eyebrows Not a Necessary Evil—Some Rolls Form Eyebrows in Less Time Than Others — Suitable Roll Covering Aids Reduction.

By E. H. HELLIWELL

THE PROBLEM OF EYEBROWS and clearer waste may seem a minor matter and hardly worthy of serious consideration, but its real importance is evidenced by the large number of imperfections caused by bunches of clearer waste found in the finished products of mills where the collections of this waste are not effectively removed and kept from contact with the strand. A bunch of clearer waste nipped off into the strand in the earlier processes soon becomes broken up into many smaller pieces and these become scattered throughout the finished work. A number of such imperfections in cotton fabrics are shown in Fig. 1. The removal of this waste from the fabric often leaves holes, causing a defect in the goods which classifies them as second quality.

A broad viewpoint, sometimes taken of the question of clearer waste, suggests the general adoption of revolving clearers as a simple solution of the problem. The many opponents of this type of clearer will, however, point out that the small bunches of rolled-up fibers caused by the slipping of a clearer roll in contact with the top roll will frequently fall into the strand and are a greater evil than eyebrows. This is especially true on slubbers, with its bulky, twist-free strand, high roll speeds, and large production.

Many mill men regard the eyebrows of clearer waste which hang as curtains from the front top rolls of drawing, roving, and spinning frames as a necessary evil. Other mill men consider them as an unavoidable result of the operation, but with no evil effects. They state, and with some truth, that the removal of this waste from the stock is desirable. Its removal from the front top roll is necessary to prevent roll lapping. It is much better to have the eyebrows accumulate at the front of the rolls where it can be seen and removed, than it is to have it collect between the rolls, where it is hidden from view and is in a position to be plucked into the work.

The latter statement, that collection of clearer waste at the front of the roll in the form of eyebrows is less objectionable than clearer waste carried well up into the clearer flannel, is not strictly true. Eyebrows form on some types of top rolls in a very brief space of time and these soon hang down. Unless removed or tucked up frequently, they come in contact with the strand from the front roll. How quickly these curtains build up will be explained in the tests made and reported on different types of top-roll coverings.

PICKING SCHEDULE. Where the clearer waste is carried well up into the clearer flannel, it does eventually build down between the first and second top rolls. If not removed, it will come in contact with, and be plucked off by, the strand. This action takes a much greater length of time than does the forming of an eyebrow on the front of the roll. The operator, on regular cleaning schedules, picks this collection from the clearer and eliminates all danger of its entering the strand. Schedules for picking clearers vary on different types of work and frames—from every two hours on drawing, to less frequent intervals on finer frames. Correct schedules specify that this clearer picking shall be done only on the doff. This precaution permits the removal of any small particles of clearer waste which may fall on the stationary strand before the frame is started. It would be a difficult matter to arrange any reasonable cleaning schedule effectively to take care of the eyebrows that are so quickly formed with some types of rolls.

Results of tests made on rolls that are relatively free from eyebrowing are given, including the length of time it requires for the clearer waste to collect between the rolls and contact the strand. But, if present cleaning schedules as generally followed in most mills are maintained, danger of clearer waste being plucked is eliminated.

Quality, condition and position of stationary clearers are important in the proper retention of the clearer waste after it has been removed from the top rolls. A good waste-retaining nap is essential, and the front ends of the clearer flannel should extend for a short distance beyond the point of contact with the top front rolls. A wire brush made from old stripper clothing will be found useful in preventing matting of the clearer and will maintain the nap in good working condition. Clearers should be turned around when the nap becomes worn to present a new napped surface or should be replaced. The diameter of all lines of top rolls should not vary much, as this prevents proper contact of the clearer flannel with the tops of the smaller rolls.

Judgment on the eyebrowing behavior of top rolls should not be made too quickly after the rolls have been set into the frame. Certain types of rolls do not develop objectionable

features until they have been in use for a considerable time. This varies with different types of rolls and the nature of the product. In many instances, the fault continues to increase for a considerable time and is a continual cause of annoyance and complaints from the frame tenders. These complaints are usually justified, because this condition greatly increases the work of tender. Increased picking and attention are required, increased end breakage also results, and much imperfect work is returned from the following process.

EXPERIMENTAL PROCEDURE. A long-draft slubber was selected for the testing of the different types of top rolls. This frame furnishes the severest kind of test, as it is the most frequent source of eyebrows on the particular type of cotton tested. The strand of roving passing between the rolls is bulky and contains no twist to hold the fibers together; roll speeds are high; and the production per spindle is large. The results, however, will be found to be applicable to all frames from drawing through spinning.

Types of roll coverings selected for the test were as follows: plain calfskin, calfskin embossed with a fine pebble-like surface to increase the surface friction, plain cork, a composition roll with fine ground cork imbedded, and a roll of synthetic composition. All rolls were run for one week on the same regular work on adjacent spindles before tests were started. The following facts were sought: (1) The number of grains of clearer waste per hour made by each type; (2) The location of this clearer waste accumulation; (3) The length of time each type will run before the clearer waste builds up to contact the strand; (4) The nature of the waste made.

RESULTS OF TESTS. Little difference will be noted in the amount of clearer waste made by the different types of roll coverings, as indicated in the accompanying table. The location of the accumulation is of great consideration, but varies greatly with different types of rolls. The place where the clearer builds up influences the length of time which it takes before it comes in contact with the strand. Roll types, Nos. 3, 4, and 5 accumulate waste in front of the roll and it hangs down as a curtain and soon contacts the strand. The time it takes to contact the strand is used as a standard of comparison between the different types of rolls. However, it is hardly safe to use this time period in actual practice, because frequently particles of clearer waste will drop into the strand without being nipped off by direct yarn contact.

Roll type No. 2 carried the clearer waste too far back on the clearer for ideal performance. This web of waste built downwards quite rapidly between the first and second top rolls and presented the danger of particles dropping into the strand. Roll type No. 1 distributed waste in the most favorable position of all types of clearers. It is well distributed over the entire area of clearer flannel covering the front top roll. This permits a much longer time to run before any danger exists of clearer waste either dropping off or being nipped into the strand.

The nature of the clearer waste from roll types Nos. 3, 4, and 5 is almost identical. Only short, neppy fiber is present. Types No. 1 and 2 show some long, clean fiber. Considerable amount is present in No. 2 and a smaller amount in No. 1.

Established cleaning schedules on these particular frames called for clearers to be picked once a doff on the time of doffing. Doffing periods are spaced 103 min. apart. With this schedule, the eyebrows on roll types Nos. 3, 4, and 5 will have to be tucked up once or twice per doff while types Nos. 1 and 2 required no attention except at doffing.

All the rolls tested, with the exception of the embossed calfskin were regular commercial rolls with no special treatment. In operation, the nature of the surface of the roll appeared to have a greater influence on eyebrowing than did the composition of the roll. Roll types Nos. 3, 4, and 5 acquired a smooth, glassy surface which did not furnish sufficient frictional contact with the fibers to carry them up into the clearer. Type No. 2 retained a strong frictional contact with the fibers and carried them slightly beyond the point of most effectual control toward the back of the roll where they build down between the first and second rolls. Type No. 1 gave almost ideal results in frictional coefficient and distributed the fibers well over the entire area of clearer flannel in contact with top roll.

In the table, types of roll covers have not been identified as conditions in other mills might give slightly different results. It is urged, because of variable conditions, that each mill run its own tests on the different types of roll covers available. Tests should be conducted at a temperature of 68°F. to 74°F. and with a relative humidity of 54 to 58%.

Results of Tests for Eyebrowing Properties of Roll Covers

Roll Cover	Grains per Hr.	Location	Time in Min. to Contact Strand	Nature of Waste
Type 1	1.20	Center and back	153	Some long fiber
Type 2	1.24	Back	125	Some long fiber
Type 3	1.16	Front curtain	58	Short neppy
Type 4	1.12	Front curtain	54	Short neppy
Type 5	1.14	Front curtain	42	Short neppy

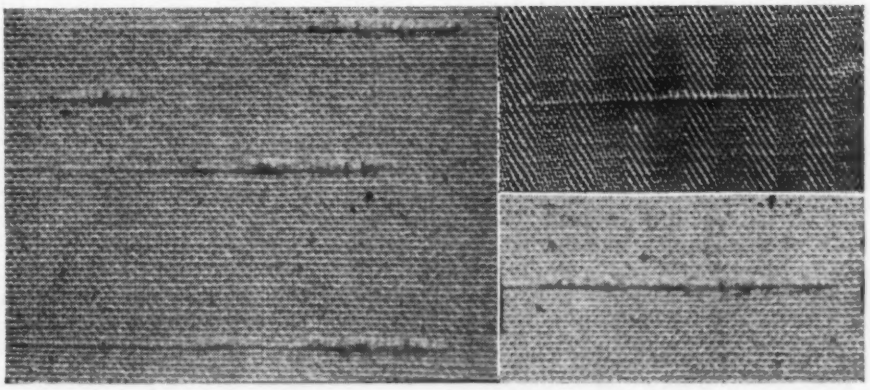


Fig. 1. Slubs found in cotton fabrics frequently may be traced to eyebrowing and clearer waste.

Union Relations Made Basis for L-M COMMITTEE

HIGHLIGHTS: Landers Corp. Had Labor-Management Committee Before WPB Sponsored This Plan — Grievances Are Promptly Adjusted — Plant Paper, a Good-Will Ambassador, Carries Both Union and Management News—Suggestion System Works Well and Quickly

By B. M. STARKS
Personnel Manager,
The Landers Corp., Toledo, Ohio

THE LANDERS CORP., Toledo, Ohio, had its own plan of labor-management cooperative leadership in operation for several years before the War Production Board's sponsorship of "labor-management committees," and it did not have to make any essential changes to qualify under the WPB plan. Details of the Landers plan are written into that firm's contract with TWUA, which represents all the employees excepting office, executive, administrative, and laboratory personnel, under a closed-shop contract. It has been in operation long enough for all members of the organization to become used to living under it, and most of the kinks and wrinkles were smoothed out some time ago.

The basic philosophy of the plan is that labor and management are not natural antagonists, but natural allies, engaged in a mutual endeavor, with mutual interests. When they struggle against each other, no matter who wins, the effort is sterile and unproductive, for it ends in nothing more than a redivision of existing value, without any new value being created. But, when labor and management work together against common problems, and overcome common obstacles so that their joint tasks are performed more effectively, with greater efficiency, less waste, better organization, less confusion or misunderstanding, greater safety, and in a general spirit of mutual friendliness and good will, both labor and management enjoy a positive gain from their cooperation, not only materially but also in the equally important terms of human satisfaction.

Realizing that it has been the traditional pattern for labor to be somewhat suspicious of such sentiments coming from management, at least until practice demonstrates the sincerity of them, the Landers management has been willing to go more than half way in living up to its part of this idea. The response has been increasingly gratifying, and at the present time each party is contributing a fairly equal confidence and effort toward making the plan work.

To implement this general idea, Landers has four principal tools: the joint grievance and executive committee; the standards committee; the plant paper (the *Landers Lantern*), and a suggestion system.

L-M COMMITTEE. Joint Grievance and Executive Committee is chief labor-management committee. Representing labor, are the chief shop steward, and three other members elected by the union for terms of one year. From management, it has the president, plant manager, and two other management members. This committee investigates and settles all grievances that are not disposed of at some earlier stage of the systematic grievance handling procedure. Individuals filing grievances may attend the related committee-meetings. Every effort is made to investigate the facts and merits of all grievances promptly, and to work out settlements that are fair and satisfactory to everyone concerned. This committee assumes the premises that neither side of an argument is likely to be entirely right or entirely wrong, that misunderstandings and grievances are bound to occur when numbers of men are working together, that both labor and management are by no means perfect and make frequent mistakes even with the best of intentions, but that almost any differences can be resolved by reasonable men who sit down together, discuss and agree upon the facts of the case, and then try to work out a fair adjustment. Meetings are conducted like a conference of businessmen, not like trials or contests.

This joint committee is also the principal liaison medium between labor and management upon general subjects of mutual interest. Problems are discussed. Changes in job classifications and rates are proposed, investigated, and settled. Government restrictions are explained and discussed when they bear upon matters of joint interest. Recently, of course, special problems caused by wartime conditions have been in the forefront, problems of manpower, new employee training and integration, increasing production, handling the 48-hour week, and so on. Whatever affects the general interests of labor and management is within the scope of this committee. Minutes are kept of its meetings, and copies are approved and filed by the union and by the management.

The Standards Committee is a more technical body. All of Landers production operations are performed under an incentive bonus plan. Normal production standards were origi-

A group of recent issues

nally set by mutual agreement between labor and management, after careful time studies and a trial period, when this plan was first installed. All subsequent changes, as new products or new methods and processes have been introduced, have been determined by this Standards Committee. No changes are made excepting when new products or new processes are introduced. All questions upon standards are settled by this committee. It is made up of three labor members, including the department steward of the department under consideration, and three management members, including the foreman of the department involved. No formal minutes of its meetings are kept, but its decisions are published to the union and the management as soon as they are made, since these normally affect earnings and payrolls. The standards committee also functions as a capability committee whenever questions of relative capability come up between two men bidding for the same open job.

The plant paper, the *Landers Lantern*, published once a month, has been useful in reinforcing the general idea of group activity and community of interests. It features names and news about what people in the organization are doing, and keeps track of employees now serving in the armed services. Each department of the plant has its own reporter. Space is provided in each issue for union news and announcements, which are made by the secretary of the local union. Management contributes articles about company plans, postwar developments, important announcements, and an editorial. The format of the paper is kept simple and inexpensive, to preclude any impression that it costs more than it is worth.

The Suggestion System is built around the idea that the men who are operating the machines know more about them than anyone else, and that they can, if properly encouraged, make valuable suggestions of ways to increase efficiency, safety, and the quality of products. Suggestions are handled promptly, impartially and thoroughly, and prizes are awarded immediately for all suggestions that can possibly be accepted. No suggestion is ignored, and when one is received that cannot be adopted, the maker always receives an explanation of why it cannot be used, with the company's thanks and encouragement to make further suggestions. Prizes naturally vary with the value of suggestions, and run from war stamps for minor ones to war bonds for others. There is also an annual contest for the two best suggestions of the year, with war bond prizes. Suggestions are handled as rapidly as possible, lest delay cause anyone to feel that his suggestion has been disregarded. The company has received a suggestion, considered it in detail, passed upon it, installed the suggested device, and delivered a war bond prize to the maker, all in less than 24 hours. News about winners of suggestion awards is featured in the plant paper.

ORGANIZATION OFFERS HELPFUL PROGRAM. Added to these labor-management activities, Landers has other policies and practices affecting employee welfare which do much to encourage the favorable morale conditions which must account for part of the success of the labor-management plan. These include a foremen's committee, which reviews all individual job classifications and ratings monthly, and makes all promotions and upgradings; a profit-sharing retirement pension trust, supported entirely by annual donations by the company; group life insurance; hospitalization insurance; length-of-service insignia; and a policy of giving whatever assistance is possible to any employee who has troubles, difficulties, or problems of any sort, whether connected with his work and relation to the plant or not. This latter policy is by no means a patronizing activity, but simply a friendly willingness to help fellow-workers. From a strictly business point of view it is sound, because employees who are worried over personal affairs are more likely to get into quarrels, imagine affronts, magnify petty happenings into grievances, and even to have accidents and damage machinery and materials.

The axiom that whatever affects the organization affects the welfare of each individual in it has its converse at Landers. That firm believes that whatever affects the welfare of any individual in it affects the welfare of the organization.

To anyone just starting a labor-management plan, the Landers experience indicates that the details of the plan are relatively unimportant if the activity is begun and continued in the proper spirit. Formal organizations will vary with the conditions of each company, and will probably be modified as the work develops. There is no magic-formula set-up that will guarantee results. But when representatives of labor and representatives of management sit down together and work together to solve their common problems in a spirit of mutual confidence and unity of interest, they solve them. This has worked well for Landers and has created substantial new values for both labor and management.

of "The Landers Lantern" which has lately gone from mimeograph to letterpress form.

CONDENSATE CONTROL

HIGHLIGHTS: High-Pressure Condensate Return Cuts Fuel Costs—Increases Boiler Capacity in Marginal Plants.

By **RALPH LUNDRIGAN**
Cochrane Corp.

THE CAREFULLY PLANNED HEAT BALANCE, found in most textile mills, is frequently upset by the pressure of processing and finishing military fabrics. New finishing equipment has been added to many plants. Temperatures have been increased. But boiler capacity has not been increased.

New problems in drainage of equipment and conservation of heat units have developed as the result of increased processing demands. Boiler plants are taxed to the utmost of their capacity; and, in some instances, difficulties in maintaining boiler operating pressures are developing. When these problems present themselves, it is well to consider the possibility of returning condensate to boilers at high pressure. Where high-pressure steam is used, this will save fuel and increase available boiler capacity. When lower-pressure steam is used, the problem of drainage and hot-condensate recovery is also involved. Maintenance of maximum production is paramount in either instance as the experiences of the following textile mills indicate.

A large worsted mill, located in New England, found that a heavy flash loss occurred when three additional cloth dryers, using steam at approximately 90-lb.-per-sq.-in. pressure, were added to the boiler load. Condensate was returned to an open receiver. Fuel costs rose rapidly, and difficulty was experienced in maintaining boiler operating pressure with a feed-water temperature of 212° F.

A high-pressure condensate return system was installed, as shown diagramatically in the accompanying illustration, to return the 9,000-lb.-per-hr. condensate load from the dryers in a closed circuit directly back to the boilers, and at a temperature of 320° F. This hot return increased the available boiler capacity — enabled steadier operating pressures—reduced the fuel cost for this load by 11% and cut down the make-up requirements. An even greater benefit was the increase of 10% in the drying rate brought about by positive elimination of condensate from the dryer coils.

HIGH-PRESSURE RETURN SYSTEM. Essentially, a high-pressure condensate return system by-passes the conventional open type of receiver and forms a closed system. When condensate is returned in the usual open system, it is not possible to exceed a temperature of 210° F. However, with a closed system, only a slight temperature drop is obtained. For example, if equipment is being operated at 100 lb. per sq. in. to obtain a temperature of 338° F., it may be possible to return the condensate to the boiler at 320° F. Hence, a heavy flash loss (the difference between 320° F. and 210° F.) is prevented.

The jet-loop principle is used to draw the condensate from the processing equipment. The actual mechanism, shown in the illustration, consists of a jet pump which positively draws the hot condensate and entrained air through the return pipe lines. Air is eliminated from the circuit by passing through an air separator installed in the discharge line to the boiler. Operation is always under pressure in this closed system so as to feed discharge back to the boiler with only a slight temperature drop.

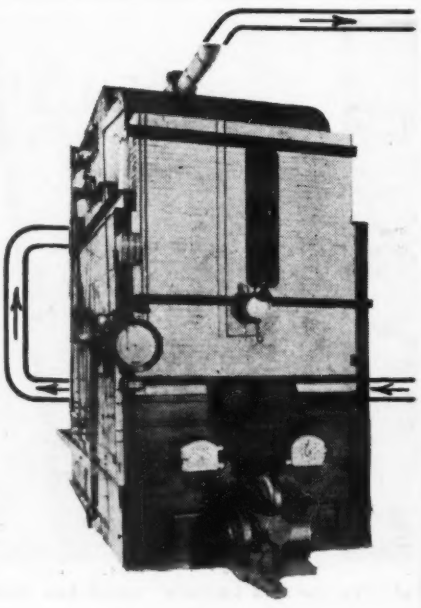
TEXTILE MILL INSTALLATIONS. The New England mill that first installed a high-pressure condensate return system to permit operation of three added dryers later required additional rotary presses. When the additional rotary presses, each using steam at 75 lb. per sq. in., were installed, a second condensate unit was utilized to return the condensate directly to the boilers at 310° F. The additional load of 100 hp. was easily taken in stride by the boilers, which formerly had been inadequate.

In a mid-west dyeing plant, yarns were being dried in cabinet-type dryers utilizing 70% of the boiler capacity at full operating pressure. Heavy flash loss from the receiver and difficulty in maintaining full boiler operating pressure occurred during periods when four or five of the dryers were under full load. Also the drying time was not uniform because of difficulties in drainage which upset the normal loading and unloading cycles, and fluctuating boiler pressure resulted in lower pressures at peak loads. Condensate return was installed.

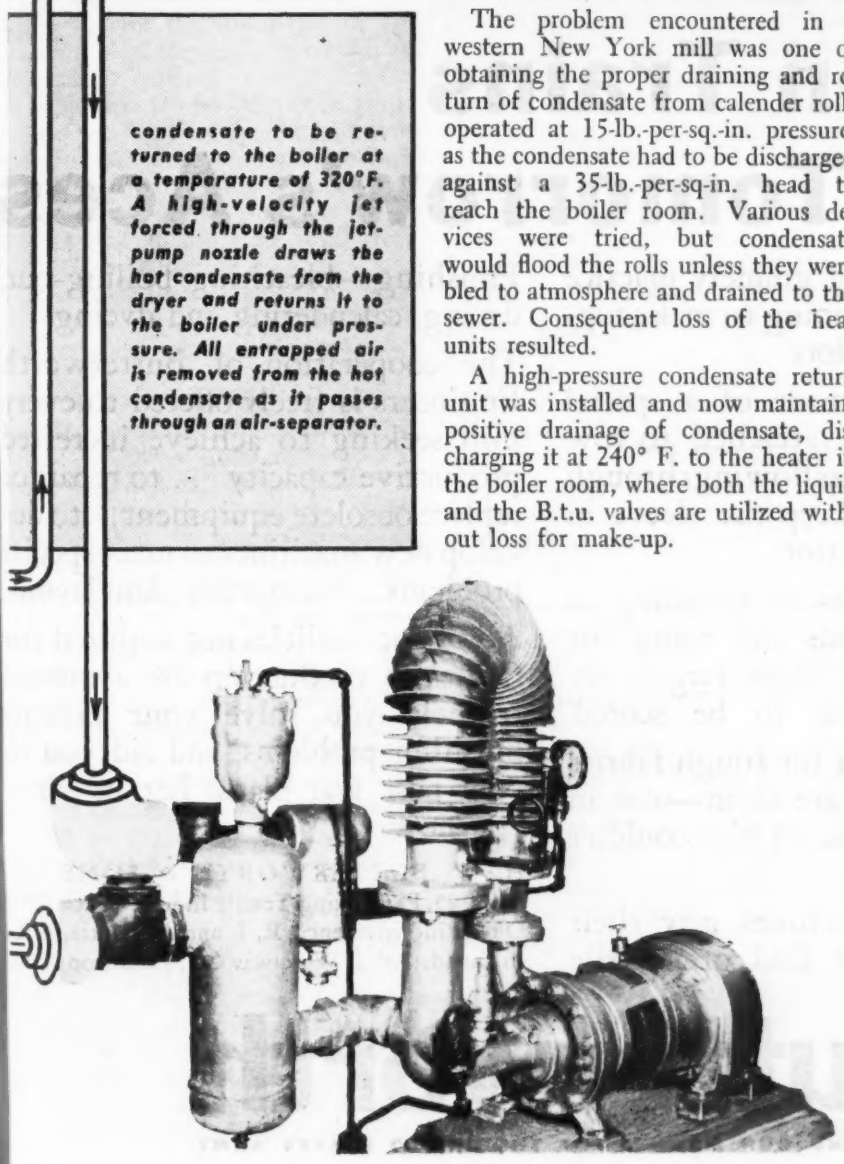
These dryers now are drained and the condensate returned to the boilers without flash loss and at a temperature within 10° of that of the steam utilized. Production of the dryers has increased 17% because of uniform heat from the coils, boiler pressures are steady, and a 18% fuel saving is realized. Part of this saving is due to complete absorption of the heat from lower-pressure returns and pump exhaust by the make-up water—not possible before when the high-pressure returns flashed from the receiver.

DIAGRAM SHOWING FLOW OF HIGH-PRESSURE, CONDENSATE-RETURN SYSTEM

Simple condensate control in a textile mill is shown. The wool dryer is supplied with steam at 90 lb. per sq. in. pressure. Discharge of condensate is through a steam-trap and a jet-pump. Operation of the system is under pressure, permitting



In Textile Mills



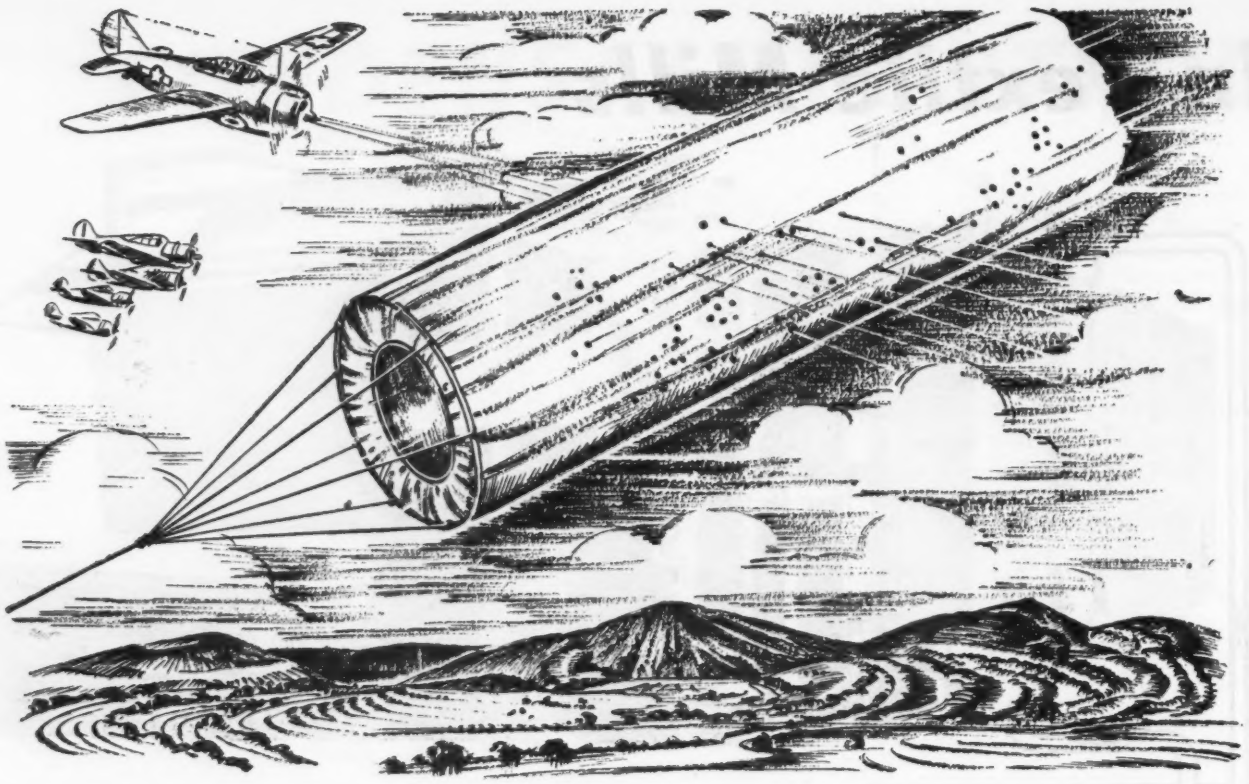
condensate to be returned to the boiler at a temperature of 320°F. A high-velocity jet forced through the jet-pump nozzle draws the hot condensate from the dryer and returns it to the boiler under pressure. All entrapped air is removed from the hot condensate as it passes through an air-separator.

The problem encountered in a western New York mill was one of obtaining the proper draining and return of condensate from calender rolls operated at 15-lb.-per-sq.-in. pressure, as the condensate had to be discharged against a 35-lb.-per-sq-in. head to reach the boiler room. Various devices were tried, but condensate would flood the rolls unless they were bled to atmosphere and drained to the sewer. Consequent loss of the heat units resulted.

A high-pressure condensate return unit was installed and now maintains positive drainage of condensate, discharging it at 240° F. to the heater in the boiler room, where both the liquid and the B.t.u. valves are utilized without loss for make-up.

A large eastern Pennsylvania rayon manufacturer was experiencing great difficulty in obtaining uniform drying conditions on large-coil-equipped heaters located some distance from the boilers. These heaters utilized turbine back-pressure bleed steam at 40 lb. per sq. in. This created a serious bottleneck in the manufacturing process that could only be corrected by the adding of more dryers. The dryers discharged the condensate through traps into a common return line leading to a vented receiver from which there was constant heavy flash loss. A centrifugal pump then returned the condensate against a 70-lb.-per-sq.-in. head to a closed receiving tank in the boiler room at about 205° F.

The return line from the dryers was by-passed around the vented receiver and centrifugal pump and connected into the jet suction inlet of a high-pressure return unit. Discharge was directly to the boiler room against the 70-lb.-per-sq.-in. head. The dryers were equipped with six large sections of 1½-in. pipe coils, each section being drained by an inverted bucket trap, around which was a ½-in by-pass. The only change made was to install an orifice valve, sized for less than the minimum flow of condensate in each by-pass. Temperature increases of 10° to 15° F. occurred in the dryers, and temperature was held more uniform. Complete elimination of condensate and entrained air from the coils is now maintained. Temperature of condensate delivered to the boiler house has been increased to 267° F.



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SPINNING EXPERIENCE
from Georgia Meeting-by-Mail

HIGHLIGHTS: Spinning Humidities Vary — Female Doffers 75 to 80% as Efficient as Male — Synthetic Cots Helped by Revolving Clearer — Plush-Covered Scavengers — Loading of Spinning Tape — Curved Web Rings — Winds for Automatic Spooling

THIS SECOND INSTALMENT of our report of the 1944 spring Meeting-by-Mail conducted by the Textile Operating Executives of Georgia (the first, on carding, appeared in the June, 1944, TEXTILE WORLD, page 98) contains summaries of the replies on spinning problems.

AIR-CONDITIONING. Members were asked to give the advantages of air-washing, air-changing, or air-conditioning in their spinning rooms. A number of mills reported no experience, while others with such equipment said it is helpful but does not give uniform humidity throughout the room. One mill with experience on all types reported that all are more satisfactory than old-style humidifiers.

The humidities employed on long-draft spinning by various mills are shown in the accompanying table.

Table: Humidities for Long-Draft Spinning—Spring Meeting-by-Mail, Textile Operating Executives of Georgia

Mill No.	% R. H. without designation as warp or filling	% R. H. Warp	% R. H. Filling	Remarks
1	.....	45–55	45–55	No seasonal change.
2	60–65	.....	.....	55–60 % r.h. on finer yarns than 50s.
3	60	.....	.....	55% with overhead cleaners.
4	55	.....	.....	Tolerance 52–60 % r.h.
5	55–60	.....	.....	.....
6	55	.....	.....	.....
7	62	.....	.....	.....
9	65	.....	.....	.....
10	.....	65–70	55–60	.....
11	55–60	.....	.....	.....
12	55	.....	.....	.....
13	....	60	55	.....
14	.....	55–60 (winter)	50–55 (winter)	.....
	.....	60–65 (summer)	55–60 (summer)	.....
17	55	.....	.....	.....
18	62–65	.....	.....	.....

FEMALE DOFFERS. On the use of women doffers, the consensus was that women could not do as much work as men. One mill estimated women 75% as efficient as men; another, 80%. Women must be put on smaller assignments, and this has made the men want the small assignment.

Mill No. 4 has female doffers who lift 900 bobbins an hour, run doff truck up to the big alley, and slide box to floor. Doffs weigh approximately 46 lb., and spindles vary from 192 to 288 per frame with 2⅛ to 2¾-in. rings. Mill No. 10 claimed 75% of the girl doffers quit in three to nine months. A girl doffs 60 sides in 8 hr., or 810 bobbins per hour; while men doff 65 sides in 8 hr., or 875 bobbins per hour, weighing about 4 oz. each. In Mill No. 11 the figure is about 810 bobbins per hour—4-oz. packages. Mill No. 12 has girls doffing about 8,000 bobbins in 8 hr. in frames of 252 spindles, 2-in. ring. Mill No. 14 has women doffing filling about 900 bobbins per hour on frames of 304 spindles, 0.10-lb. package, and doffers doff their own yarn, with help, into filling chute. Seven mills reported limited or no experience with female doffers.

Mill No. 11 reported that on warp doffing the yarn is dumped by a yarn man, who fills the cabs with empty bobbins and delivers them to doffers. Doffers bear down in their own frames, doff, and piece up; and under this arrangement they handle about 1,100 bobbins per hour.

SYNTHETIC COTS. Experience in using synthetic for cots was reported as follows:

Mill No. 14 on 3s to 30s (112,000 spindles) reported with synthetic front rolls 50% less laps, less grooving, fewer ill effects from hard ends, longer life, and better-running spinning. Roll costs were reduced. This mill's spinning is equipped with revolving top clearers. It finds it no longer necessary to heat the room over week ends to reduce ill effects on start-ups. Mill No. 1 reported similarly favorable experience, but noted a tendency toward "eyebrows" where revolving front clearers are not used.

No. 8, with four years' experience on synthetic cots, reported less lap-ups and lower replacement cost. No. 3 gets "splendid results," but cautioned about oiling, as these cots are very slick and sometimes fail to turn as freely as leather cots. Some cots are hard to

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buff evenly; some sweat and soften up over the week-end. No. 12 hasn't found that synthetic cots equal leather.

On cots of synthetic impregnated with cork no conclusive experience was reported, although a number of mills stated that they were experimenting with them.

SCAVENGER ROLLS. Plush-covered scavenger rolls, according to Mill No. 14, are easy to clean. They keep steel-roll flutes clean, are excellent to use on back lines, and have fewer laps. While these rolls are more expensive than paper, their advantage outweighs their expense. Mill No. 2, which used the plush-type roll for about six years, reported the plush very satisfactory when new but that sooner or later the plush became packed with lint, making cleaning of these clearers practically impossible. No. 3 tried a few frames but concluded they were not suitable for coarse work. Also No. 20 reported that the tape around the middle of the roll comes off. Some mills preferred the paper-covered rolls; and one mill, the blue denim.

LOADING OF SPINNING TAPE. Ten mills said there was no satisfactory method to prevent spinning tapes from loading. Mill No. 3 said it had no trouble from loading, even when using low-grade cotton, possibly because the tapes are exposed at the sides of the frames where the spinner brushes the rails frequently with a whisk broom. No. 5 said "Keep oil off tapes"; while No. 6 said, "Blow with an air hose." No. 12 explained that it was going to try an application of coal tar which has been recommended. No. 19 runs its tapes against a piece of metal twice yearly to clean them.

CURVED-WEB RING. Mills No. 5, 6, 10, 11, 12, and 15 all reported no more ends down on the curved-web ring than on the straight-flanged ring, while Mill No. 2 said that use of the elliptical traveler eliminated this difficulty of ends down. No. 4 had less ends down on these rings as the result of using the proper weight of traveler. Mills No. 3 and 17 had more ends down on the curved ring, and No. 3 went back to the straight flange.

FILLING AND COMBINATION WINDS. Only two mills reported experience with a bunch builder on warp wind. Mill No. 9 explained that it is running a test now and finds it helpful to stop the yarn from breaking down at the winders with about half a layer left on the bobbin caused by the frame being doffed with the ring rail going up. The bunch builder makes the ring rail start up on a down stroke every time the frame is doffed, regardless of the direction it was going when pulled down, thus binding the end of the thread at the bottom and preventing break-backs in unwinding. Mill No. 14 has two plants equipped with this bunch builder and finds they get less wild yarn and fewer tailings at the spooler; also at starting up, the doffer is able to do his piecings at the bottom of the bobbin. These plants have some trouble with chokes when this bunch builder is used, due to the smooth-finished base of the warp bobbin. This has been overcome somewhat by raising the bunch on the bobbin (¾ to 1 in. from bobbin base).

On the question as to whether anyone had found a filling or combination wind that would run as well as a warp wind on a Barber-Colman spooler, Mills No. 4, 12, 13, and 14 replied they had not been able to get such winds to operate as well.

Mill No. 1 reported that, since getting new cams, it appeared it would have better success with the filling wind. Mill No. 3 reported experiments with a cam having a "fast-down" and a "slow-up" movement of the rail for a combination wind which seems to offer possibilities.

Mill No. 20 answered, "Yes, we run combination wind on 21s, 25s, and 30s warp yarn, 37,580 spindles. Ring diameters are 1¾ and 2 in.; spindle speeds, 9,200 to 9,800 r.p.m.; bobbins, 8 in.; stroke, 4½ in. on 2-in. ring, 4¾ in. on 1¾-in. ring (starting stroke on empty bobbin); separators, none; Barber-Colman spooler speed, 1,275 yd. per min. on drum."

The drawing for prize winners among the participants in the "Meeting-by-Mail" of the Textile Operating Executives of Georgia. Left to right: Roland L. Lee, Jr., Cotton Technologist of Callaway Institute, Inc.; J. H. Daughdrill, Vice President and General Manager of MMC Division, Callaway Mills; Violet Starke Webb, Receptionist at the Institute; Robert W. Philip, President of the Institute and Secretary and Treasurer of the Association; Seth Neyson, Superintendent of Unity Spinning and Oakleaf Plants, Callaway Mills. In this drawing Pacolet Manufacturing Company, No. 6, and the Calumet Plant of Callaway Mills each won a $25.00 War Bond; and a $5.00 hat was won by Ingram Dickinson and F. D. Jacoway, two of associate members.

Three Papers Presented Before Piedmont AATCC

The summer meeting of the Piedmont Section of the American Association of Textile Chemists & Colorists was held at Winston-Salem, N. C., June 17 with 235 members present. Dr. E. A. Robinson, of the National Oil Products, Inc., discussed "Pretreating of Rayon Yarns for Hosiery"; Prof. A. H. Grimshaw, head of the textile chemistry and dyeing departments of N. C. State College, Raleigh, N. C., spoke on "Sizing of Cotton, Rayon, and Nylon Yarns," and Dean Malcolm Campbell, of N. C. State College Textile School, discussed "Textile Schools and Textile Research." Officers of the Piedmont Section are Henry B. Dixon of Burlington, N. C., chairman; Sidney M. Cone of Greensboro, N. C., vice president; Leland G. Atkins, of Charlotte, N. C., secretary; and Wyss L. Barker of Charlotte, N. C., treasurer.

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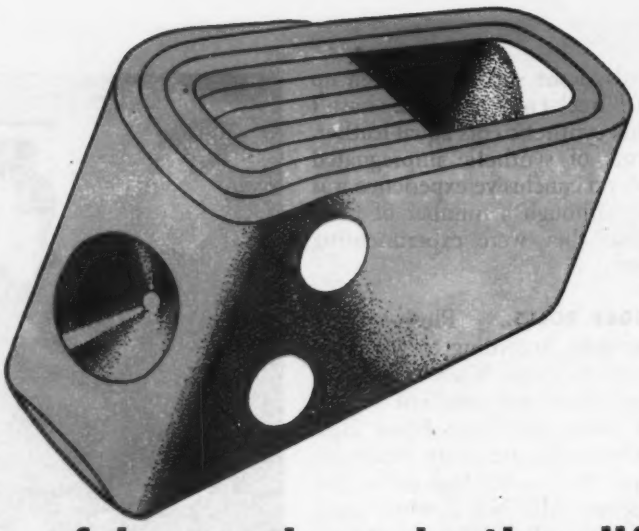
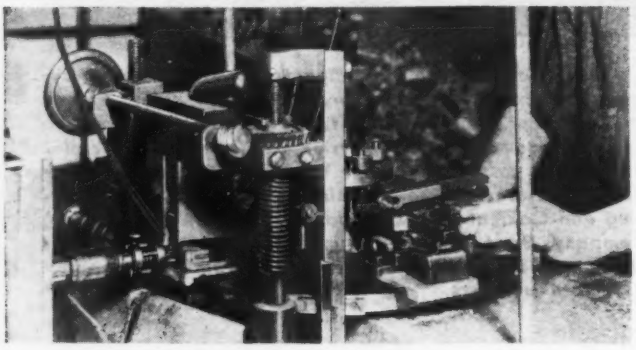


ORANGE is the sign of longer loom leather life



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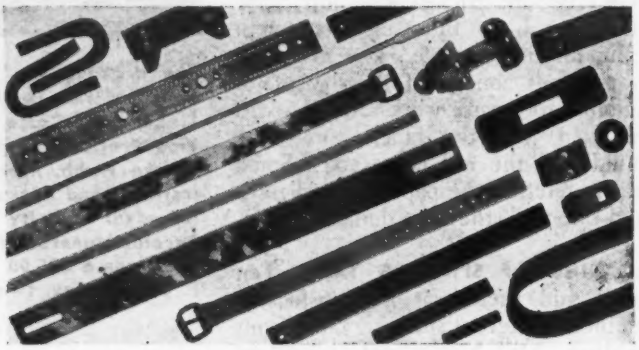

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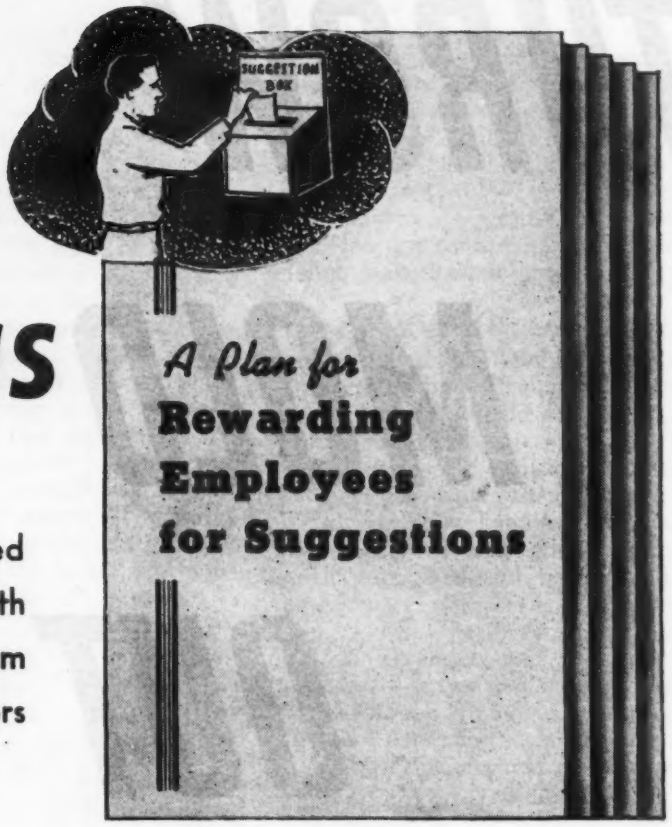
Handling EMPLOYEE SUGGESTIONS



HIGHLIGHTS: Suggestion Boxes Used by Some Woolen and Worsted Mills With Outstanding Results—Awards Range From $1.00 to $100.00—One Mill Offers $250.00 Yearly Prize for Best Idea.

By HAROLD E. REED
Assistant Editor, Textile World

Handbooks for distribution among employees which describe operation of suggestion-box system are a big help in selling the idea to workers.

HOW OFTEN has the textile industry had to draw from the wealth of personnel experiences accumulated by many large manufacturing industries? Take, for example, the simple suggestion box. How many of these boxes have you seen in textile mills?

If large savings can be made in time and materials in war plants through employee suggestions, why can't the same results be obtained in the textile industry? What sort of a system should be established? How should awards be made?

To answer these questions, TEXTILE WORLD made contact with a representative number of woolen and worsted mills, some large and some small. It was found that most small mills do not have a suggestion-box system, but a few of these mills do recognize suggestions made by employees. Of the larger mills, most have some form of suggestion-box system, but results obtained vary greatly.

SYSTEMS EMPLOYED. Analysis indicated that the degree of success of a suggestion-box system is in proportion to the amount of effort spent by the company in backing the system.

For example, Thomas Appleyard, assistant general superintendent, Alexander Smith & Sons Carpet Co., states, "We got into the suggestion system through labor-management groups very early and have received many suggestions, some of which have received local and national recognition."

According to a report from an official of Continental Mills, Inc., his company has had a suggestion-box system in operation for several years.

"During this period," states the official, "we have received hundreds of suggestions from our employees which have been put into effect. The awards range from $1.00 to $100.00."

The general basis of evaluating awards at Continental is 10% of the annual savings the first year, with supplemental awards where savings are greater than anticipated. A large percentage of the suggestions received deal with safety matters and the removal of hazards. Such suggestions are difficult to evaluate, as the savings obtained are through reduction in accidents, lost time, etc. A suggestion committee has been established to fix the awards in the case of such suggestions. Previous awards for suggestions in similar categories are used as a basis for such cases. All awards are in cash.

Another woolen mill, while not having a suggestion-box system, points out that it is advantageous to have a suggestion committee consisting of representatives of labor and of management. This committee should go over all suggestions to determine their worth.

Also, it has been proposed that an employee making a good suggestion be awarded a small button, in addition to a cash award. The button, while only a small token of recognition, will be worn by the employee in the mill and thus stimulate suggestions from his fellow workers.

A suggestion-box system was established in another woolen mill about ten years or so ago. Little publicity had been given the system by the management, and as a result the employees were in doubt about the purpose of the system. Awards were very low, seldom running over $10.00 and generally less than $5.00. As a result, the suggestion box, when first started actually became a complaint box.

MISUNDERSTANDINGS WHICH MAY ARISE. The engineering department in a mill always has under way several different studies covering new and improved methods. Where a mill has a suggestion-box system, management must take every precaution to prevent a misunderstanding between employee and employer which may arise from suggestions. For example, an employee might make a suggestion as to how a certain process could be shortened. However, the engineering department may have already made a study

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In the textile industry, Dowicide has proved its value in several ways:

First, it protects stock from spoilage due to mold attack during manufacturing operations.

Second, it can be incorporated into the product to produce mold-resistant fabrics to be used under conditions of high humidity. These include tarpaulins, canvas, awnings, etc.

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of the subject and be about ready to install the same shortened process or a modification of it.

Both parties arrived at the same conclusion but independently of each other. It will be almost impossible to convince the employee that the engineering department did not steal his suggestion. Frequently, such an instance will paint to the employee a black picture of management.

Because such conditions arise, it is advisable to have the suggestion-box system in a mill handled by a labor-management group, with management having the final say in the matter. When labor and management both have a share in the operation of a suggestion-box system, equitable understanding is generally reached covering practically any condition which may arise.

Operation of a suggestion-box system by an outside company specializing in handling public-relations matters is another thought offered by the superintendent of a large worsted mill. Such a system would insure impartial operation of the suggestion box, with the mill committee deciding on the actual worth of all ideas in question.

James M. Shute, manager, personnel department, Uxbridge Worsted Co., Inc., reports, "We have installed a suggestion-box system in the various mills of our company and it is now in its second year of operation. It has proved very successful, having produced several ideas that resulted in considerable savings to the company and many more that represented savings of a lesser amount."

Uxbridge has established a fixed standard of cash awards. The initial award, if the suggestion has merit, is small. Later, if the award proves its worth, additional awards are made. A bonus prize of $100.00 is awarded for the best idea submitted each quarter. A grand prize of $250.00 is given for the best suggestion of the year.

Typical suggestion blanks, as used in some mills, are shown in Fig. 1. All blanks should be numbered so the identity of the writer may later be established by his retaining possession of a numbered stub. The signing of ones name to a suggestion blank frequently deters some employees from offering a worth-while idea.

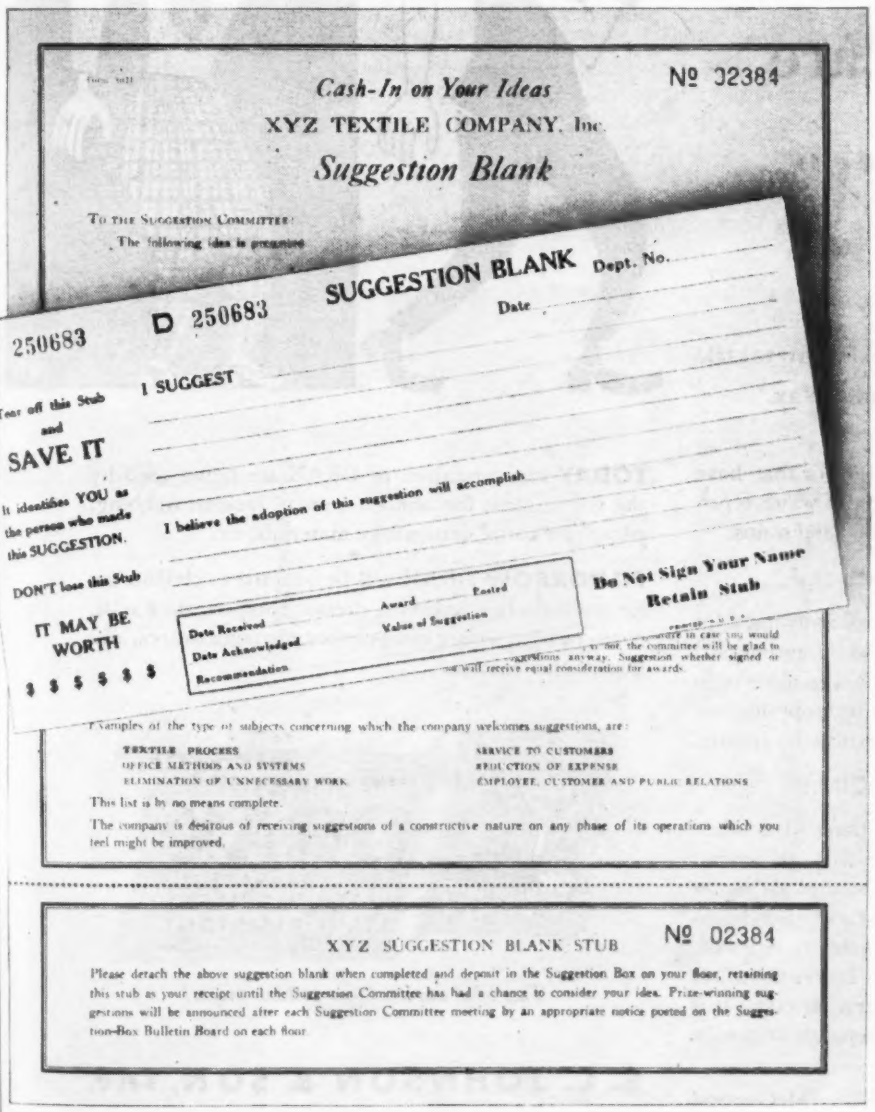
Cash-In on Your Ideas
№ 02384
XYZ TEXTILE COMPANY, Inc.
Suggestion Blank
To the Suggestion Committee:
The following idea is presented
SUGGESTION BLANK
Dept. No.
Date
D 250683
250683
I SUGGEST
Tear off this Stub and SAVE IT
It identifies YOU as the person who made this SUGGESTION.
DON'T lose this Stub
IT MAY BE WORTH $ $ $ $ $ $
I believe the adoption of this suggestion will accomplish
Date Received
Award
Posted
Date Acknowledged
Value of Suggestion
Recommendation
Do Not Sign Your Name
Retain Stub
Samples of the type of subjects concerning which the company welcomes suggestions, are:
TEXTILE PROCESS
OFFICE METHODS AND SYSTEMS
ELIMINATION OF UNNECESSARY WORK
SERVICE TO CUSTOMERS
REDUCTION OF EXPENSE
EMPLOYEE, CUSTOMER AND PUBLIC RELATIONS
This list is by no means complete.
The company is desirous of receiving suggestions of a constructive nature on any phase of its operations which you feel might be improved.
XYZ SUGGESTION BLANK STUB
№ 02384
Please detach the above suggestion blank when completed and deposit in the Suggestion Box on your floor, retaining this stub as your receipt until the Suggestion Committee has had a chance to consider your idea. Prize-winning suggestions will be announced after each Suggestion Committee meeting by an appropriate notice posted on the Suggestion-Box Bulletin Board on each floor.

*Fig. 1. **Forms for use with suggestion boxes. Numerals should be utilized for identification to preserve anonymity of writer.***

SUGGESTION BOOKLET. Any textile mill considering the establishment of a suggestion-box system should prepare, to be issued to the employees, a booklet similar to that on page 77, which outlines and explains in detail the operation of the system.

The suggestion handbook may resolve itself in a form similar to the booklet described and illustrated in the February, 1943, issue of TEXTILE WORLD. Mills having such a handbook for employees and possessing a suggestion-box system should cover in their handbook details of its operation. Mills not possessing such a handbook should have one prepared covering suggestions only.

Essentially, a suggestion handbook must cover the reasons for establishing a suggestion-box system, how it will assist the employees with their work, and how constructive suggestions will compensate them in cash.

The first page of one handbook reviewed defined a suggestion as . . . a positive, constructive idea for making a better product by a safer method, at the right time and at a lower cost. Types of suggestions are covered, such as those of tangible value like improved handling methods, more efficient utilization of machinery, etc., and intangible suggestions such as reduction of accident hazards.

Instructions on how to fill out forms should be covered, along with the suggestion that additional material such as samples, sketches, and other material will assist in evaluating the contribution. Procedure in investigating suggestions should be outlined. But most important from the standpoint of employees is information on rewards.

Every employee turning in a suggestion wants to know how much he will receive. Wherever possible, examples should be given and principles outlined which will permit him to calculate his reward.

Before establishing a suggestion-box system, a mill should make a careful investigation into all types of systems now in operation throughout the industry. But it should be remembered that, regardless of the system used, the success of the plan is dependent on the amount of effort expended by the company in backing it.

"Forget that umbrella, fella, these slacks are DRAXed*!"

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After this war there will be an increasing demand for stain and water-repellent fabrics. Millions of returning service men will expect them. America has been made stain and water-repellent conscious and wants this protection. You, then, will profit by giving your textiles this feature.

Get the facts and you'll pick DRAX!

DRAX impregnates the individual fibres of a fabric with particles of wax, making them non-absorbent. Dirt and stains don't soak in, but stay *on the surface* where they are easily washed off. And with each washing, DRAX protection can be completely renewed. DRAX has an excellent money value. It does not affect porosity, is non-flammable, and imparts no odor. It is very stable in solution—won't readily separate or harden during storage.

Already announcements on the "Fibber McGee and Molly" radio program are creating a consumer demand for DRAXed fabrics. It will pay you to investigate DRAX now! Write for complete information.

TODAY vast quantities of DRAX are being used by the government for uniforms, coats, jackets, webbing, parachute cords, camouflage materials, etc.

TOMORROW DRAX will be adapted to civilian use for work clothes, uniforms, dresses, rompers, slack suits, coats, jackets, winter sport clothes, curtains, drapes, and many other fabrics.

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Machines and Methods for PLASTIC COATINGS

HIGHLIGHTS: Proper Cloth Needed for Uniformity—Holes and Broken Selvages Require Special Attention—Knife Coating Simple and Efficient—Roller Coating Versatile—Solvents Present Fire and Health Hazards.

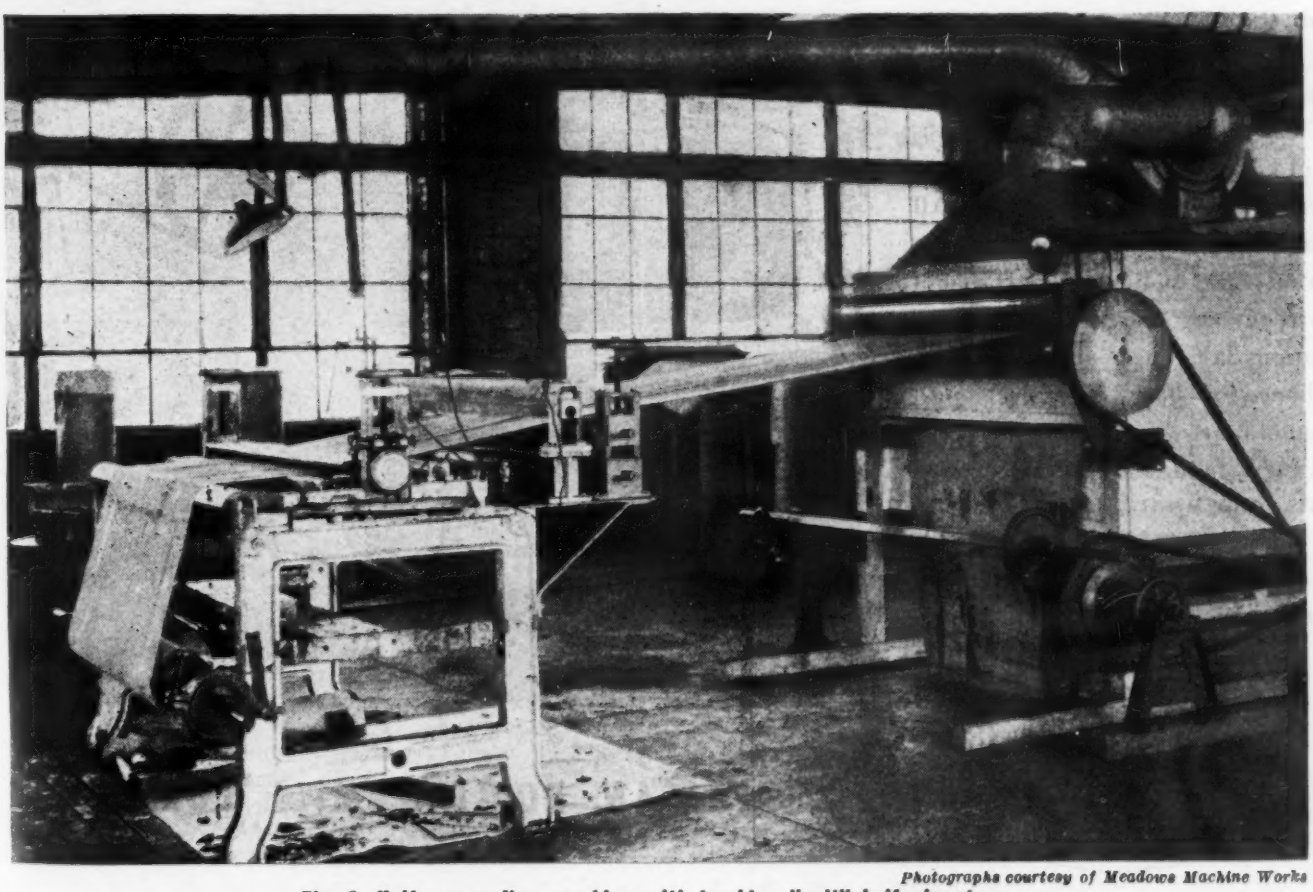
By JOHN B. CLEAVELAND

ALTHOUGH THE COATING of textiles can hardly be considered a new industry, little has been done to standardize the larger general techniques of coating. The foreman has often been left to his own devices in the setting up of coating machines and the training of operators. If his background is sufficiently broad, this may prove perfectly satisfactory, but all too frequently this is not the case. Neither do the sales and administrative branches of a company opening a coating department have much chance to familiarize themselves with the new technique. They must educate themselves in a hit or miss fashion that often allows years to pass before a true picture of the problems and possibilities of the coating room are much more than vaguely guessed.

This lack of understanding of the coating procedure, extending as it does back to the piece dyer and the weaving mill, has already caused many headaches and much wasted material. If the textile supplier should become familiar with the coating operation, he would find many possible improvements in the weaving, sizing, or finishing of the cloth, thus materially improving the final result and insuring a continually increasing market for himself. It is in this close cooperation to produce a better fabric that the greatest value of a more general understanding of coating should lie.

While it is true in a broad sense that each coating job requires a different technique, if the few basic norms are assimilated, variations rarely present difficulties.

CLOTH MAKEUP. Control of the coating process should start with the makeup of the cloth into rolls preparatory to coating. The conventional wooden cores with square holes to fit



Photographs courtesy of Meadows Machine Works

Fig. 1. Knife spreading machine with backing "spit" knife in place.

IS YOUR EQUIPMENT in this 50%?

According to a recent survey in one section of the country, more than 50 per cent of the textile processing equipment now in use cannot be operated at a profit in postwar competition.

This means that profit-minded mill men are planning *now* to replace their obsolete, unprofitable equipment as soon as the needed materials are released by the War Production Board. Many intend to standardize on stainless steel machines, and this is why . . .

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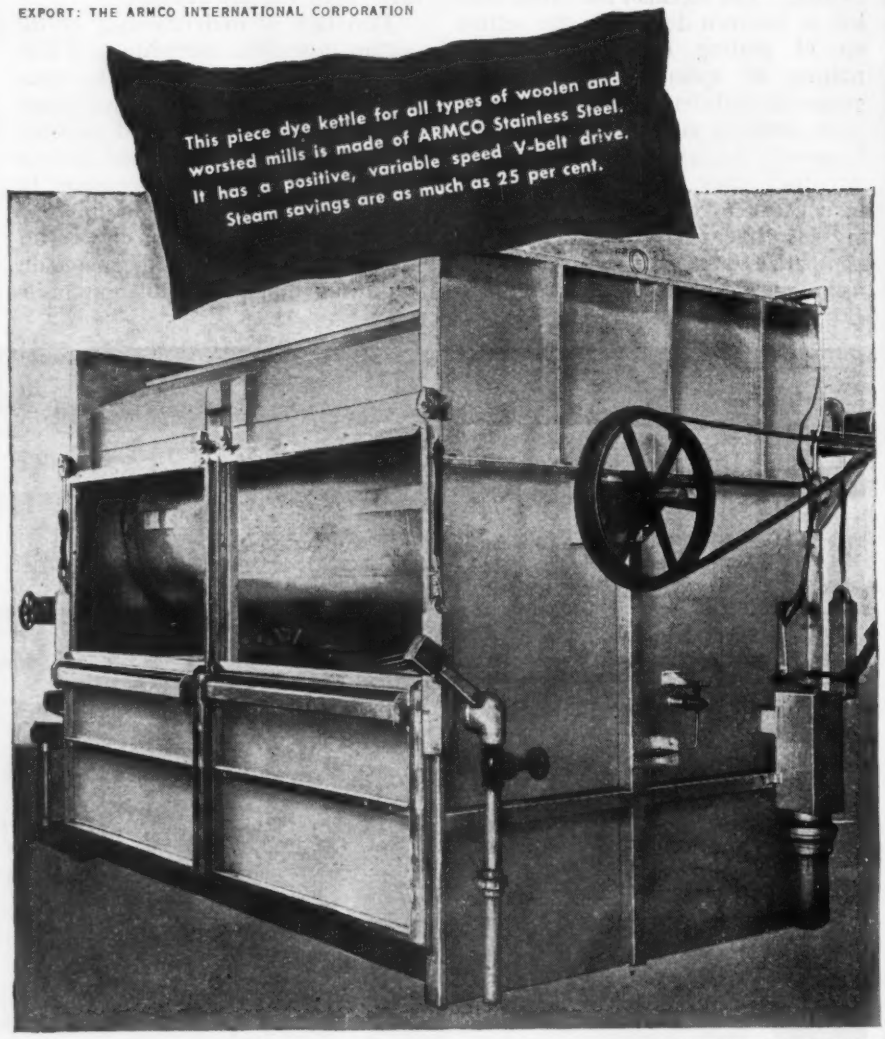
Equipment made of ARMCO Stainless Steel helps keep production *up*. Clean-up time comes and goes without boilouts; only a hose and plain water are needed for cleaning. All machines can be kept busy—going from dark to light, peppy shades without any "carry-over." Dye solutions last longer and there is no chance for "flock" or strings to pull out of fabrics because the surface of ARMCO Stainless is hard and smooth.

IT'S SOLID METAL

These are only a few of the extra advantages that textile men get from this rustless metal. ARMCO Stainless Steels reduce upkeep and extend service life. Since it is solid stainless steel, there is no plating to wear off.

It will pay you to plan now for peacetime profits with this "textile man's metal." Consult with your equipment manufacturer, or write The American Rolling Mill Co., 2471 Curtis St., Middletown, Ohio.

EXPORT: THE ARMCO INTERNATIONAL CORPORATION


This piece dye kettle for all types of woolen and worsted mills is made of ARMCO Stainless Steel. It has a positive, variable speed V-belt drive. Steam savings are as much as 25 per cent.

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THE AMERICAN ROLLING MILL COMPANY

on a square shaft are most satisfactory for cloth, although 3-in. fiber cores are more frequently used in paper makeup, partly because of cost and partly because of their smoother, marproof surface.

Every effort should be made to wind the fabric smoothly, evenly, and without distorted tension. Particularly in the light-weight fabrics there is a tendency to stretch in sections, causing slack spots or baggy selvages. These spots cause a falling away of the tension of cloth against knife with consequent uneven coating. This sagging may appear on either both edges, in the center, or occasionally in small stretched spots. Much can be done to improve the coatability of such a fabric by sewing the seams unevenly to compensate for the stretched portion.

SEAMS AND SELVAGES. The seams in a roll madeup for coating are extremely critical. The tension exerted on the web of almost all coating machines is so great that a poorly made seam will break and much time will be lost in rethreading the machine. A seam not made at right angles to the warp will also cause trouble, either by breaking, coating heavily and unevenly, or wrinkling badly. A carefully made butt seam such as obtained with a Merrow or Metropolitan sewing machine is excellent, as is also a double-stitched, lapped seam.

Breaks in the selvage and holes in the cloth should be removed prior to coating unless they are very small. They almost always rip and result in machine shutdowns that are costly and irritating. If such faults are inherent in the fabric or if it is unavoidably weak, a suitable machine with a minimum of tension applied to the web must be used, such as a knife-blanket or knife-roller machine with a dryer that has some form of conveyor system to lessen the pull.

In any case a tear through the selvage should be removed by cutting a crescent-shaped piece out of the edge. This removes the strain from the point of the tear and usually removes the danger of ripping from the smaller breaks in the selvage. A hole in the center of the fabric may be protected by backing with a tab of gummed paper tape.

KNIFE COATING. The principle of spreader coating is simple and efficient but variation of the coating by adjustment of the machine is necessarily very limited. The knife is almost always set between the vertical and 30° to vertical. If the knife is vertical or nearly so, a slightly heavier coat will be deposited, but the difference is not great. The tension of the mill-roll brake should be kept as light as possible, consistent with producing an even coating. Less tension may be applied when coating with the sharp-edge knife than when using the round or hook-edge blade. A slight control over the coating may be exercised by using a tight brake for a light coating and a loose brake for a relatively heavier coat.

The greatest control over the coating weight is obtained by changing from a sharp-edge knife for light coatings to a round- or hook-edged one for heavy coating. The radius of the round edge has a considerable bearing upon the coating weight applied. The most universal blade has a radius of $\frac{1}{4}$ in., although other blades with radii varying from $\frac{1}{8}$ in. to 1 in. are sometimes handy. The sharp-edge blade, as the name implies, is one coming to a flat surface $\frac{1}{16}$ in. thick or less.

The character of the coating varies with the type of blade used. The sharp edge tends to fill the low spots such as the interstices, and scrape the higher places clean. This leads to a smoother coating and to a film that is kept on the surface of the fabric, whereas the larger radius and squeezing action of the round blade forces the solution into and through the fibers of the cloth.

It is evident, then, that the sharp blade should be used to fill and bridge the openings in a fabric with the minimum use of coating solution, and the round or hook knives are preferably used for forcing or impregnating a solution into a fabric adding the greatest weight of coating with as few passes through the machine as possible.

The viscosity and solid content of the coating solutions also offer an opportunity to control the coating weight. A low-viscosity coating solution will deposit a heavier first coat because of greater penetration; but after the cloth is filled, less will be applied. If a high-viscosity dope is used, just the reverse will be true; that is, a light initial coat of solution will be deposited.

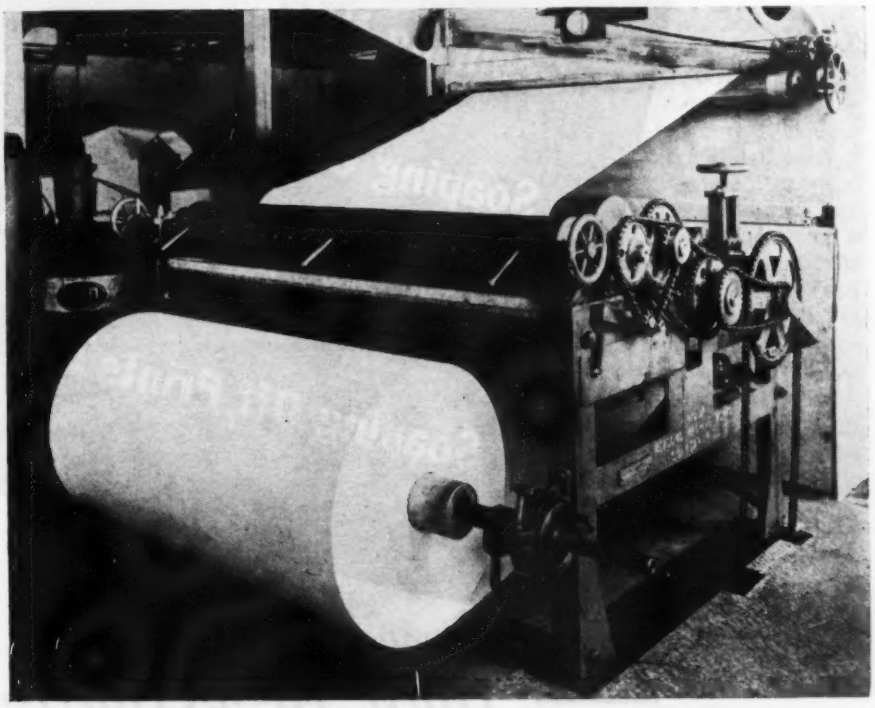

Fig. 2. Reverse-roll coating machine showing web in place.

Some viscous solutions, particularly those with a cellulose-derivative base, build up on the back of the knife during coating and release in tear drops. This is known as "spitting." A great deal may be done to eliminate this by experimenting with the angle of the coating blade, and the brake tension; but if such mechanical manipulation does not stop the trouble, the coating solution must be reduced in viscosity either by the aid of heat or by thinning. Occasionally a smoothing blade with a large, round, blunt edge is placed immediately behind the coating knife so that it bears lightly on the wet surface. This smooths out any "spits" so they are barely visible, and for such coatings as pyroxylin artificial leather the arrangement has proved

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generally satisfactory. Such a set-up is shown in Fig. 1.

Coating solutions may be applied to the fabric or paper from a reservoir pan by gravity feed just before the base material passes under the knife; or if the solution is too viscous to flow readily, it may be pumped or dipped on by hand. The solution is either applied in excess and allowed to flow over the edge of the material to a container; or if viscous, adjustable metal or wood stops are attached to the knife to hold back the overflow.

ROLL COATING. The problems of roller coating are considerably different from those of knife spreading. In general roll coaters require a much thinner dope than do knife machines. As an example, the type of machine shown in Fig. 2 coats best with a solution about as viscous as suitable for proper hand brushing. It is almost impossible to keep such a thin solution from penetrating and saturating a porous fabric or paper.

In the machine shown, the coating solution is applied to the material by an applicator roll rotating in the opposite direction to the travel of the web. The solution is applied well in excess of what is eventually required, and the web passes between two rolls serving to remove the excess and meter the wet film to the proper thickness. The metering roll touching the coating on the web also rotates in an opposite direction to the travel. This principle is known as reverse-roll coating. If the rolls do not rotate against the travel of the material in this manner, a peculiar ripple forms, running with the length of the web and resembling corduroy. With the rapid dry and poor flow of most plastic solutions, these ripples do not level out.

In another popular type of reverse-roll coater the solution is metered by reverse roll to an applicator roll, and then transferred to the web passing between the applicator roll and a rubber backing roll.

Roller coating tends to conform to the surface of the material being coated. The coated surface will be only as smooth as the uncoated surface. For this reason a super-calendered clay-filled paper or a filled and calendered cloth are generally used as a base for roll coating. The roller machine will produce a much more uniform coating, with the human equation, after the machine is once set, of little concern.

Care must be exercised to keep out dirt and grit from the coating solution. In roller coating, particularly of paper, such foreign matter frequently results in tears and costly shutdowns. Here they are of more importance than in the case of the knife spreaders, simply because of the greatly increased work and time needed to clean and rethread the roller machines.

SAFETY PRECAUTIONS. There are two important health hazards in the coating operation that require thought and consideration—toxicity of solvents and danger of fire. Human susceptibility to solvents varies considerably, but most solvents used in the coating of plastics are considered sufficiently non-toxic for use if sensible precautions are observed.

Ethyl acetate, butyl acetate, ethyl alcohol, butyl alcohol, acetone, methyl ethyl ketone, methyl isobutyl ketone, toluol, xylol, petroleum diluents, etc., all fall within the range of practical non-toxicity; but great care and precautions should be used if such solvents as benzol, methyl acetate, methyl acetone, methyl alcohol, carbon tetrachloride, or other chlorinated solvents are necessary. In many states these solvents are prohibited for use in coating machines, and such legal restrictions should be studied before a questionable solvent is used.

The coating machines and drying ovens should be hooded and the solvent-laden air exhausted thoroughly. A high volume of clean, fresh air is the best insurance against the danger of exposure to toxic solvent fumes.

All solvents except the chlorinated ones, such as carbon tetrachloride, are highly inflammable and explosive if mixed in proper concentration with air. In this case also, adequate exhaustion of the dangerous fumes is the safest course to hold down the hazard.

Chemical fires of the type found in the plastic-coating plant can best be fought by the use of carbon-dioxide gas extinguishers. Such fires must be smothered with a material that will remain on the surface of the burning liquid. Water, being heavier than almost all solvents in common use, tends to sink under the solvent and spread rather than confine the fire, and therefore might actually be worse than nothing at all. Sand or other smothering agents are fair if used in sufficient quantity. It should also be remembered that a good extinguisher is worthless if no one knows how to use it. Adequate fire drills with the workmen putting out the type fires they might encounter should be regularly conducted.

The technique of coating is in a transitory phase. New plastic materials are being introduced almost daily, and old plastics are being improved. It is for the coating industry to keep pace with these new products, and to utilize their capabilities to the fullest extent. The interest and encouragement of the War Services have helped greatly to bring this about. We may safely predict that, with proper industrial cooperation and understanding, the future of plastic coating will indeed be as limitless as the horizon.

PREVIOUS ARTICLES ON PLASTIC COATINGS

THIS ARTICLE concludes the current series on machines and methods for plastic coatings by Mr. Cleaveland. Following are listed earlier installments of this series:

March, 1944, pages 74, 75, and 76—Knife coating, including knife-spreading, knife-blanket, and knife-roller machines.

May, 1944, pages 90, and 91—Transfer-roll, calender, reverse-roll, and etched coating machines.

June, 1944, pages 107, and 111—Extension, dip, and spray coating machines. Dryers.

In addition to this series, in April, 1944, on pages 112 and 113, there appeared a special article (written by Mr. Cleaveland) on coating nylon fabrics.

To round out the presentation of coated fabrics, reference can be made to the May, 1943, issue of TEXTILE WORLD, pages 59 through 64, which covered plastic coating materials and included a chart of the various coatings showing their properties. A few reprints of this 6-page article are available.

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Wool-Finishing HEADACHES

HIGHLIGHTS: Slit-Like Holes Caused by Use of Wrong Guides—Excessive Alkali Dulls Color of Finished Fabric—Piece-Goods Carbonizing Requires Acid Control—Shear-Settings Eliminate Pin-Holes.

By DAVID WELSH

TROUBLE SHOOTING in the finishing plants of woolen and worsted mills requires all the ingenuity acquired through years of experience, plus good detecting ability. Problems which constantly plague the finisher are not always those that show-up immediately, because such are easily remedied. It's the little things that hurt!

Many troubles of the finisher are those which appear suddenly when they are least suspected. The reason for their appearance is a mystery and, unless it is detected, the troubles will create many yards of seconds.

RECENT INSTANCE. A recent instance will serve to emphasize this point. A line of goods being fulled came through to the finished perch with a number of small slit-like holes. The finisher's attention was immediately drawn to this fact; the fulling mill indicated on the process ticket was, naturally, suspected and an investigation started. The rolls and the trap were examined, but nothing unusual was found.

A week went by with the same mill in action every day, but nothing more in the line of slits appeared. This was a decided relief to all concerned. It was decided that the goods running in the mill must have picked up a small piece of sharp metal, that had been dragged around, maybe dropped and picked up a few times, and finally carried out by the piece when it was transferred to the cloth washer. From the washer it may have escaped through an open gate.

But, in about a weeks time, the same type of slits appeared in another piece handled in the same fulling mill. This time the entire trap was removed and closely scrutinized. Same results, no evidence. So, the mill went

It's often the little things.

merrily on, but again the slits began to show in a number of pieces handled on the same side of the mill. Just as it was decided to take down that side of the mill for another thorough examination, the fuller found the cause. In place of the regular guide-board in front of the rolls with the usual porcelain pot-eyes, a ladder-type of guide-board had been installed with 1-in. brass pipe as spacers. Four pipes were used on each side of the mill in pairs of two; each pair acted as a guide to the individual pieces.

A tangled knot that had caught in the rolls and refused to go through was the cause of the discovery. The finisher, in pulling this knot back, suddenly felt a sting on the back of his left hand and, withdrawing it, noticed a trickle of blood. On investigation, it was found that a side of one of the pipes had worn through, leaving a ragged edge. The culprit had been discovered. Lesson: use pot-eyes instead of pipe. This trouble proved to be in front of the mill instead of the back, a place where it is generally looked for when difficulties occur.

As a rule, fabric damage most frequently occurs in the fulling mill. Mill rubs, mill wrinkles, rips, holes of most varieties and sizes, whiplashes, nip holes, chafing, etc., are some defects of fulling which are easily seen but difficult to catch in the making.

Another mystery, and one which took a long time to discover, occurred when small holes appeared in fabrics at the cloth washer. These holes were caused by a ring traveler dropping through a hole in the floor of the spinning room located above the washer. The traveler finally became lodged in one of the seams in the bottom and made many a hole, mysteriously for a time. The bottom of the washer was meticulously examined many times before the traveler was finally discovered.

IT'S THE SOAP THIS TIME. Another mill was making a line of scotch plaids; the ground colors were beautiful mode shades and the plaids of varying snappy colors. Everybody was pleased with the product. However, the finisher was shocked to see his beautiful goods lose their life and snap. On investigation it was noted that nothing had been changed that might cause the colors to fade, as, during the action of the soap in the washer, the lather looked and acted exactly as it had on previous sets. This condition lasted a few days. Suddenly the shades returned to normal.

It seemed that the washer man had been in the habit of making the soap. So-called soap-making consists of weighing up the soap and alkali and whatnot, placing them in a tank, covering them with a given amount of water, boiling the mass for 3 or 4 hr., and then filling the tank with cold water. This particular week, the washer man transferred the soap-making to an assistant, telling him to weigh out carefully so many pounds of the hard soap and use so many pails of alkali. The soap was all right because it was weighed; but the new soap maker, doing exactly as he was told, put in three pails of alkali. However, he used a 12-qt. instead of a 10-qt. pail, varying the alkali enough to change the tone. It does seem that such a simple mistake would never happen, but it is just such unthought-of mistakes that bring on such mysteries.

WHO BROKE THE HYDROMETER? Carbonizing of goods in the piece, when handled in one of the new, up-to-date,

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Here is the same building before and after the application of Waterfoil . . . the raincoat for building exteriors. This scientific contribution to masonry protection has decorated and restored many valuable property investments. Waterfoil is manufactured of irreversible inorganic gels . . . non-critical materials . . . They form a hard dense protective coating bonded both chemically and physically to the masonry surface. The Waterfoil coating permits the masonry to breathe as it should, allowing water vapors to escape but impeding water absorption inwards. This helps to avoid reinforcing bar rust and spalling. The Waterfoil literature may prove very valuable to you if you are responsible for property maintenance. Send for it today.

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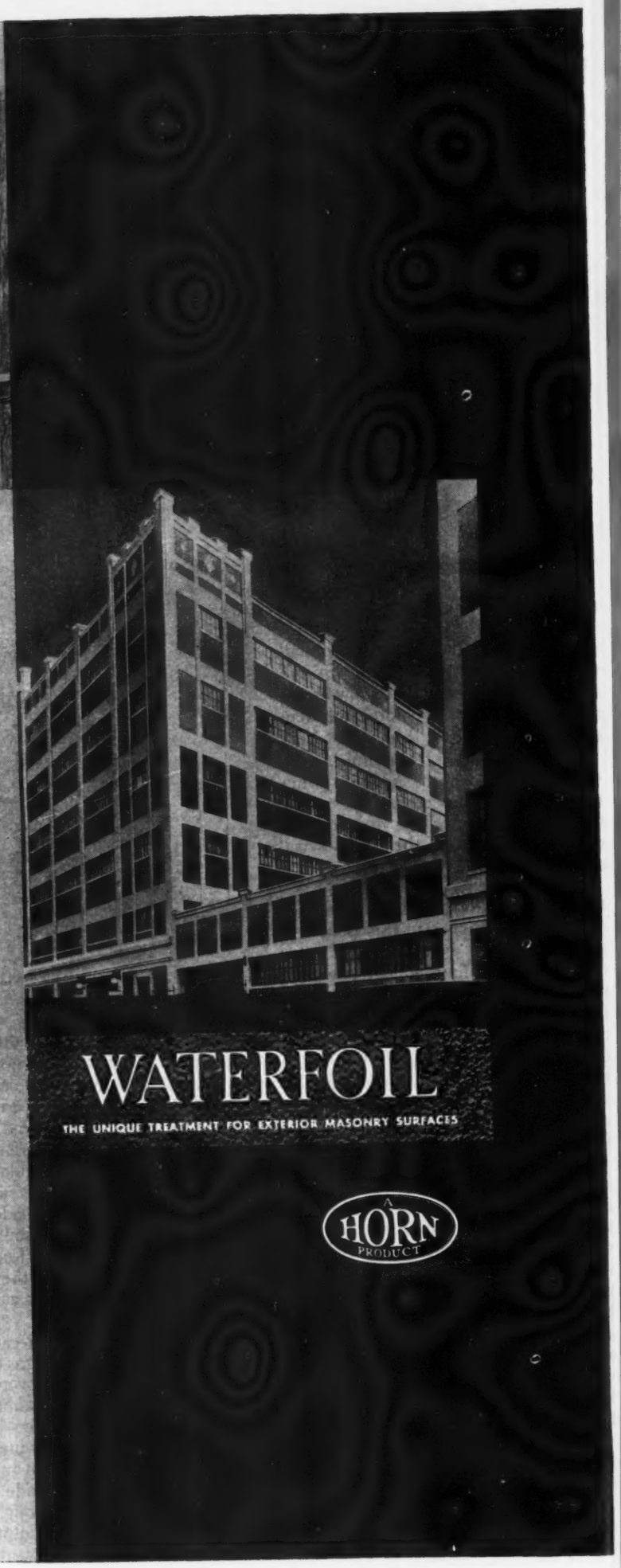


carbonizing ranges with a careful operator becomes a daily duty that seldom causes worry. In one such well-handled outfit a change occurred that kept the carbonizer and the finisher guessing for a few days.

Suddenly the goods coming off the end of the range showed a lack of thorough carbonization. Some of the burrs were a light yellow instead of the shade of burned cork. The cotton content was a dead gray instead of black. The acid was tested and registered 5 deg., the strength normally used. Only a reduction in the speed of the cloth helped the situation as far as carbonizing was concerned, and this cut the production seriously. This condition lasted a few days until the finisher discovered behind a number of empty barrels a broken Beaume hydrometer. This set the finisher to thinking. He knew there was only one Beaume hydrometer in his department. He picked up the one now in use and, much to his surprise, found it to be reading in degrees Twaddle.

On investigation he found that the man who was responsible for breaking the Beaume hydrometer had taken it to the second-hand in the dyehouse and asked if he had anything like that? The answer was, "Yes, we have two" —not even looking to see if it was either this or that. The man who broke the hydrometer was only too glad ot escape detection. But, the change had reduced the acid in strength by about 2 deg.; hence the slow down.

IT'S THE FINISH THAT COUNTS. While on a special mission to a mill making worsted piece dyes that have a mercerized-cotton stripe, the visitor was struck with the manner of scouring. He could not resist calling this matter to the attention of the young finisher. The goods would not be clean and would finish up with a disagreeeable odor, sooner or later. Also, the white cotton stripe would eventually turn yellow. The young finisher was highly insulted, replying that he didn't have to be told how to scour goods.

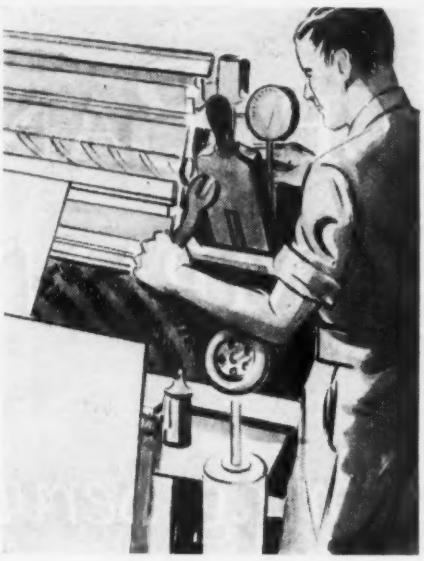
We went upstairs to the dry-finishing room where he had twelve sewers busy mending small holes, known as pin holes, caused by a wrong setting of the shearing machine.

The young finisher asked, "What would you say is the best way to take care of shears?" The answer was, "Have them set right and leave them alone as long as possible."

The young man then left for lunch. Grabbing a shear "S" wrench, the visitor lowered the carriage about 2 squares to bring the ledger blade a little farther down from the rest so as to avoid the snipping or pin-hole making. A month later a letter arrived from the young finisher saying he had no more trouble with pin holes since the day of the visit.

A few months later the report went around that all of the goods had been returned to the mill for offensive odor and stained stripes. Very soon thereafter the mill was compelled to foldup. So, after all, it's the finish that counts!

A more pronounced case on the pinhole question occurred in another mill, and the defects were running into a big loss and creating a serious argument between the finisher and the boss mender. Settlement could only be had by a virtual demonstration. The mill was good-sized and had an army of sewers busily engaged making the goods merchantable. The finisher declared that the goods were not being burled properly and that the burlers were leaving knots and slubs in the goods. This, he stated, was the real cause of all the holes. The boss burler declared there were no better-burled goods in any mill.



There was only one way to settle the argument and, more important, to stop the heavy loss being created. It was agreed to make a positive test, as follows: One piece, not yet sheared, was examined over a perch with through lighting. No holes of any kind were visible.

Half way through this test piece, a white tape was sewed in the listing. As the finisher had stated that he gave these goods three runs at certain sets with the number-end being sheared first, half of the piece was given three runs and the cylinder was lifted each time on the other half. The shear wrench was then brought into the case. The visitor set the carriage down a couple of squares and, by so doing, eased up the pinch between the rest in front and the cylinder and the ledger blade behind. All hands interested watched the complete operation. The other half, the tail end, was then given three runs at the same setting, no change being made in the notches.

When inspected, the first half sheared was found to be full of holes and pin-holes. The second half sheared as clean on the face as the other, and was absolutely free of even a semblance of a hole. The litigants were coaxed to shake hands, the evidence being indisputable.

TROUBLE AT THE STEAM BRUSH. Another mill making high-class, clear and unfinished worsteds was very much annoyed with certain cloudy effects, both on piece dyes and on fancies. The cloudiness wandered over the fabric but was very slight. The mill never had a complaint from customers; nevertheless, the staff was quite put-out because it persisted. On investigation, this fancy work was found to be originating at the steam brush.

All of the goods after decating or pressing were run over the steam brush. Looking over that machine disclosed that the bearings of the small rolls on each side of the cloth-covered steam box were much too low, allowing the piece running to be touched and rubbed by the ballooning of the steam cover, which was loose. A ¾-in. block of wood served to lift the bearings above the danger zone.

FIFTY-SEVEN STRINGS PER PIECE. While calling at another mill, the superintendent was lamenting about a two-piece lot of 18 oz. high-class, unfinished worsted topcoating just returned by a customer in a distant city. The inspectors had strung up 57 imperfections in one piece and 51 in the other. A very courteous letter, but full of meaning, accompanied the returns.

"What can we do with goods like that?" said the superintendent. "It will take a couple of days to sew them, and then it will be doubtful if they keep them."

The imperfections were of a slubby order, nothing serious. They had been pressed too hard, and everything showing up like a sore thumb. It was suggested that the pieces be given a couple of runs on the steam brush and be allowed to settle over-night. The goods were perfect in the morning and shipped back as were. A few days later a letter of congratulation was received by the mill.

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New SHRINKPROOFING Process Being Studied

HIGHLIGHTS: Underwear Institute Presents New Method at Meeting — Philadelphia Quartermaster Depot Tests Results on Cotton Underwear.

A NEW PROCESS for shrinkproofing fabrics was presented to its members by the Underwear Institute at a meeting in New York last month. The new shrinkproofing process and necessary apparatus were explained at the meeting by the inventor, Frank R. Redman.

The Philadelphia Quartermaster Depot has made numerous tests of knit garments that were treated in a model "shrinkproofing" machine, and thinks that the process has great possibilities. The depot has offered to cooperate in conducting tests and in rendering priority assistance to get a pilot plant built for the treatment of army goods. Lt. Col. Frank Steadman, of the Philadelphia Quartermaster Depot, has stated that, if this new apparatus is adopted, specifications for knit underwear probably will be revised to "true sizes."

At the meeting, Mr. Redman explained the difference between his method of preventing shrinkage and the Sanforizing process and stated that the patent office reported there was no conflict between his method and Sanforizing. His shrinkproofing is obtained by repeated rumpling of the fabric in the presence of a low amount of moisture and in the presence of heat. He explained that there is considerable difference between the relaxation of the fibers brought about by his process and the felting action of wool and that the two actions should not be confused.

FIBERS NORMALIZED. The shrinkproofing process is based on the assumption that during mill operations the natural curves and convolutions of the yarns and fibers are pulled out and are otherwise disturbed. It is claimed that shrinking results from the tendency of these fibers to return to their normal state.

The shrinkproofing apparatus operates by entering the cloth into a machine either in a dry or a moist state. If the fabric is introduced in a dry state, moisture is added by means of a steam spray. The cloth is advanced along a conveyor in a rumpled, loose manner so that at no time is there any tension on it. The rumpling is repeated in conjunction with the moisture and heat. Finally, the cloth is dried on a conveyor while repeated rumpling action continues. Fig. 2 illustrates diagrammatically the theoretical operations of the apparatus.

Below (left) are results of washing ten knit cotton undershirts, five treated and five untreated. These samples were laundered in mobile army equipment and show reduced shrinking of garments made from treated cloth. The important reduction in shrinkage is in the length.

Fig. 1. This reproduction of one of the patent drawings purports to show strained and relaxed condition of yarn before and after treatment.

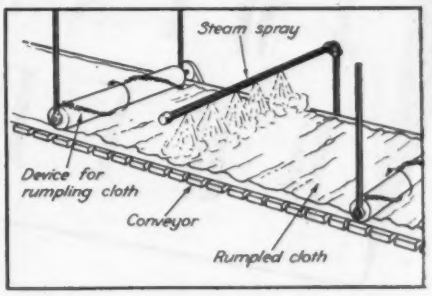


Fig. 2. Elements are housed in a unit in which temperature and heat are controlled.

Below (center) are shown the results of repeated launderings. They show that untreated cloth continues to shrink until it has contracted about 20% in length, whereas treated samples shrink much less and reach an equilibrium earlier.

INSTITUTE MAY SPONSOR. The Underwear Institute is interested in the new method and apparatus and at the time this is written is seriously considering sponsoring the process so that it will be available to the industry. The institute has appointed the following committee to investigate the machine:

Earle E. West, Underwear Institute, Chairman

Franklin Chatfield, Munsingwear, Inc.

Wesley Heilman, Gibbs Underwear Co.

Earle W. Dunmore, Utica Knitting Co.

R. P. Warriner, William Carter Co.

P. H. Hanes, P. H. Hanes Knitting Co.

Roy W. Clements, Globe Knitting Works

Maj. D. C. McLeod, Philadelphia Quartermaster Depot

INITIAL LAUNDERING TESTS

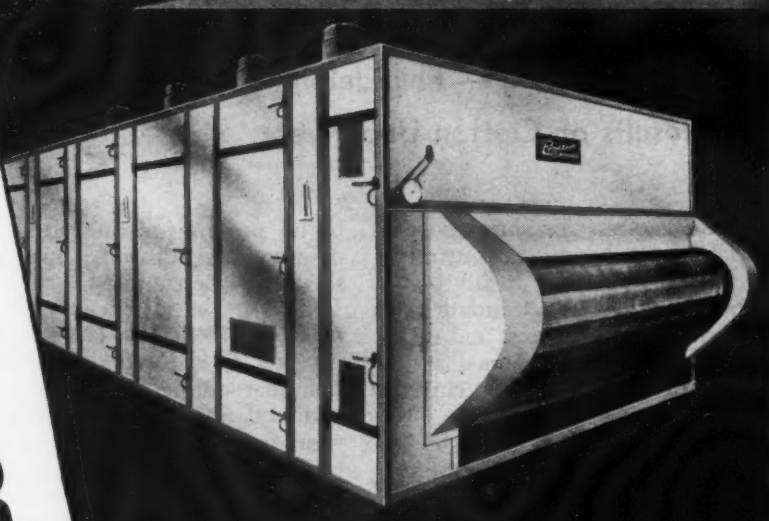
	Sample	% Shrinkage Length	% Shrinkage Width	% Elongation Length	% Elongation Width
UNTREATED	C 1	14.0	0	0	1.6
	C 2	15.2	0	0	1.6
	C 3	15.3	0	..	..
	C 4	16.0	0	0	1.6
	C 5	13.6	0		
TREATED	T 1	3.0	0	0	4.9
	T 2	3.5	0	0	0.8
	T 3	4.0	0	0	0.8
	T 4	2.5	0	0	1.6
	T 5	4.0	0	8	0.8

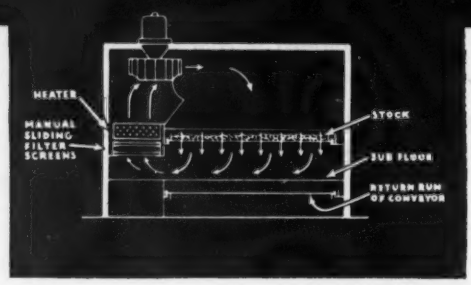
REPEATED LAUNDERING TESTS

	No. of Launderings	% Shrinkage in Length	% Elongation in Width
UNTREATED	1	14.8	1.0
	5	18.4	3.2
	10	18.6	3.6
	15	19.4	6.0
	20	19.3	5.0
TREATED	1	3.4	1.8
	5	5.4	2.4
	10	6.0	2.6
	15	6.2	3.8
	20	6.5	6.0

Improved Rayon Staple Drying with the

PROCTOR IMPACT DRYER





For drying cut rayon staple uniformly and at the same time handle large capacities, Proctor & Schwartz have developed the Impact Dryer. The principle of Impact Drying is illustrated in the cross section. Heated air is impinged at high velocity on the material as it moves through the dryer, keeping it in constant motion, thus assuring uniform drying of each fiber—in minimum time. Because the fibers are exposed to heat for a considerably shorter period of time than in older types of drying machines, fibers remain more flexible and should be better adapted to further manufacturing processes. A new automatic rotary feed, which can be operated at high surface speed, further contributes to this machine's efficiency by feeding enough material to meet the increased capacity of the dryer.

NOW IS THE TIME

It is none too soon for you to be giving careful consideration to your postwar equipment needs. A little time-out now will undoubtedly save you a considerably more costly "time-out" period when the conversion comes. Now is the time to let Proctor engineers assist you in planning for the new machinery that will help you increase your postwar profits.

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HIGH-PRODUCTION PICKER Installed at Frankford

HIGHLIGHTS: Production of 5,000 to 6,000 lb. per hr. Obtained When Picking Coarse Wools.

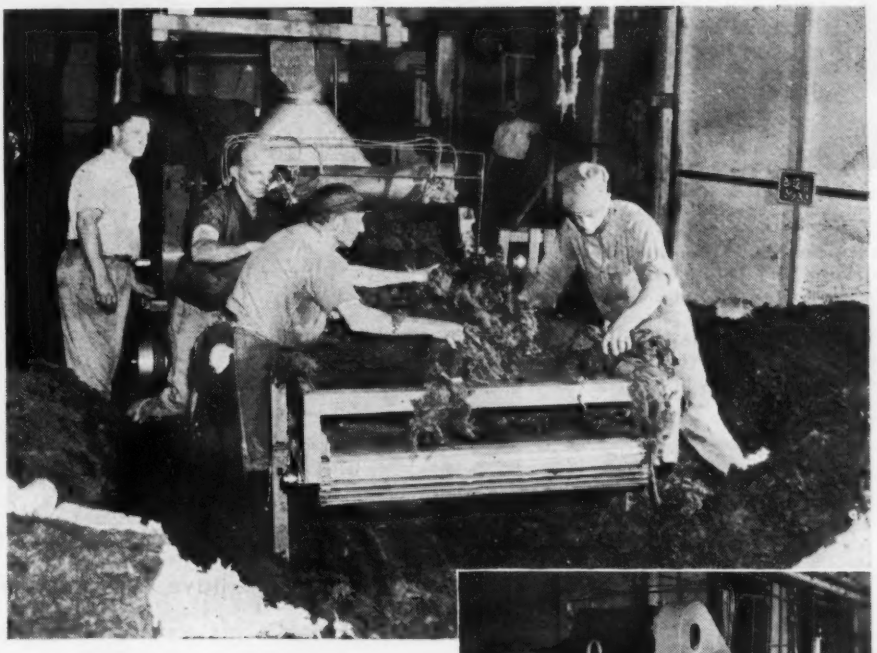
By HAROLD E. REED
Assistant Editor, TEXTILE WORLD

PRODUCTION OF WOOLEN FABRICS for the armed forces has been expedited at Frankford Woolen Mills, Philadelphia, Pa., by installation of a heavy-duty, high-production picker in the opening room. Wool was formerly opened and blended by running through a fearnaught picker; and because of recent machine changes in other parts of the mill, the picker became a bottle-neck. With the new picker installation, production is running from 5,000 to 6,000 lb. per hr. and the fearnaught has been eliminated.

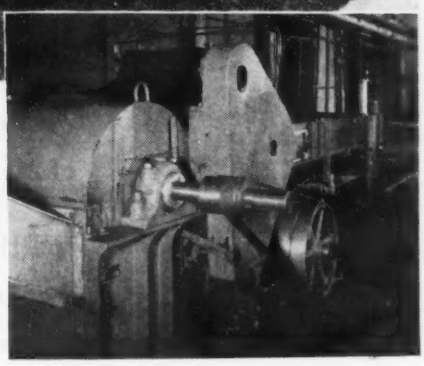
This Super-Picker, designed and installed by Proctor & Schwartz, Inc., is an 8-bar mixing picker. Bars are not interchangeable with each other, as a stagger of teeth is obtained so that stock being delivered by the feed rolls is worked on every ⅛ in. One set of feed rolls is provided. The top roll is of the cock-spur type to hold the stock; whereas the bottom roll is fluted. Feed-roll speed may be varied from 9 to 40 r.p.m. by means of change gears. The cylinder is of all-steel construction and 48 in. wide; occasionally this picker is provided with a 60-in. cylinder. Speed of the cylinder is 900 r.p.m., and a 15-h.p. motor on a pivoted mounting and driving through V-belts provides power.

The pivoted mounting and V-belt drive is of distinct advantage when the picker is operating at top output because it absorbs much of the strain and shock placed on the unit when large chunks of wool pass into the feed rolls.

The picker at Frankford Woolen is located in the center of the opening room. Bags of wool are laid out about the feed-apron in the same manner as a bale-mix is prepared in the opening room of a cotton mill. Handfuls of wool, taken from various bags in order, are laid on the feed apron. The stock is oil-sprayed before it passes into the feed rolls. Picked stock is blown to storage bins located along the side of the room where it is allowed to stand.



At least three men are required to lay a mix on the 10-ft. feed table of the Proctor Super-Picker when it is operating at full capacity. Note spray hood and nozzles above feed rolls for oiling stock.



Close-up showing cylinder and discharge end of the Super-Picker. Driving motor is on other side.

Photos courtesy of Proctor & Schwartz, Inc.

Stock is then drawn from the storage bin and given one or two additional runs through the picker, depending on requirements of the lot being processed. An overhead condenser drops the stock onto the feed apron for the second and third runs.

PRODUCTION TEST. A test run, intended to demonstrate the high productive capacity of the Super-Picker, was run for the writer.

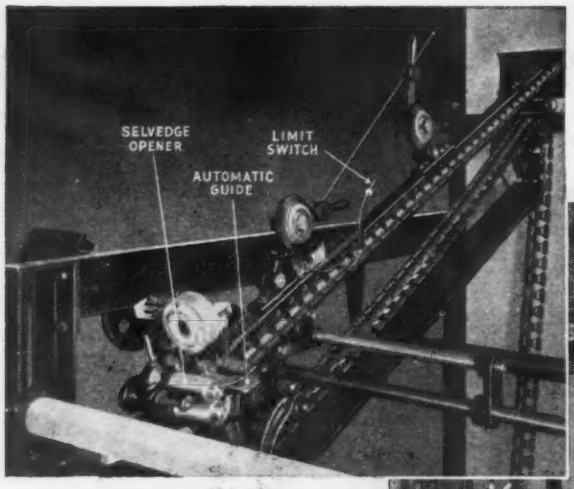
A blend consisting of 11 bags of 52s quality and two high-compress bales of 48–52s stock-dyed wool was placed about the feed apron. The blend weighed 2,800 lb. Three to five workers were required to throw handfuls of wool on the feed apron, the picker handling compressed chunks one foot in thickness. In exactly 14 min. after starting, the complete lot of 2,800 lb. had been run. A production of 200 lb. per min.!

While such production seems impossible—a picker handling 12,000 lb. of wool per hour—it must be remembered that it was operating under ideal conditions and being pushed to its maximum capacity. With ordinary work the picker will, however, handle up to 6,000 lb. per hr. Cleaning requires only 20 min.

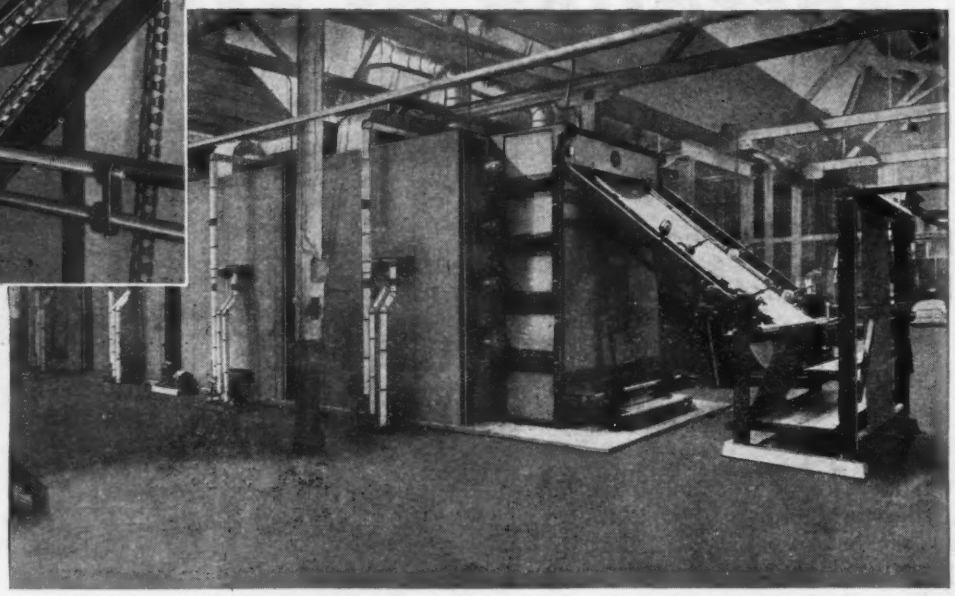
Postwar plans of Frankford Woolen Mills include an installation of a second picker so as to permit two runs before the stock is blown to the bins.

Other picker installations made by Proctor & Schwartz include a blending system whereby the picker feeds to an overhead condenser which distributes the stock on the feed apron of a pit feeder. The pit feeder feeds another Super-Picker or a fearnaught.

BOTANY WORSTED MILLS DRIES CLOTH UP TO 90 YARDS PER MINUTE WITH NEW HUNTER UNIFLOW TENTER DRYER



The cut shown above illustrates Automatic Guider, Patented Hunter Selvedge Opener, and Double Brush mounted on entering rail of Dryer. Illustration shows units mounted on left rail only, but they are furnished on both entering rails. Limit switch to stop Dryer if cloth fails to engage pins is shown by arrow. Limit switch furnished on both entering rails.



As part of their modernization program, the Botany Worsted Mills of Passaic, New Jersey, have just installed a new Hunter Uniflow Tenter Dryer as illustrated. This new unit has dried 7 to 12-ounce woolen and worsted fabrics at 65 to 90 yards per minute, 32-ounce cloth in excess of 20 yards per minute, and with low pressure steam and one man's labor.

The Hunter Uniflow is a new and different cloth tenter. It affords an entirely new conception of air drying cloth with new handle at high speeds. For example:—

Drying time in most cases is less than two minutes. Your cloth is exposed to heat and air but a fraction of the time usually required.

The new Uniflow is all metal and requires only one man's operation. It comes complete with automatic guides, automatic chain oilers, selvedge openers, temperature and humidity controls or indicators, recording devices, counters, remote control, tachometer, etc.

We invite you to write for production details on installations in scores of outstanding mills and for new complete brochure just off the press.

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JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS, U.S.A.
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Men's HALF-HOSE Defects

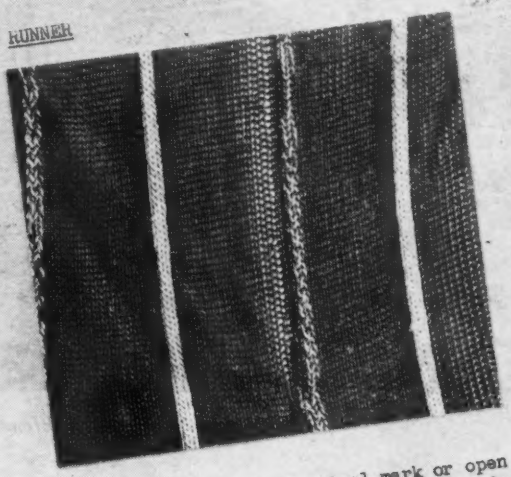
OF THE THREE HALF-HOSE DEFECTS shown here, the one marked "Break in Pattern" often is overlooked during inspection. It is not characterized by a hole or runner as are the other two shown. This defect can, however, be easily caught by the knitter when he notices that the yarn has run out or has broken. When this is noticed, the hose should be tagged so that it is sure to be handled in accordance with the practice for this type of fault.

There is little question that a knot caused the "Run and Hole" illustrated. The arrow shows this offending knot. Close inspection indicated that the knot failed because of the way it was tied. If a flat knot had been used, it might not have failed, and a stocking would have been saved. A page such as this is of value to show to winders, or to yarn suppliers, to demonstrate the importance of knots.

There might be some question as to the cause of the "Runner" pictured. It could have been caused by numerous things, but actual inspection showed the trouble to be a damaged latch on a needle.

In compiling a knitting defects notebook it might be well to group defects together, although other methods, such as have previously been suggested (see earlier issues of TEXTILE WORLD), can be used. Almost any system of compiling should be better than none.

RUNNER

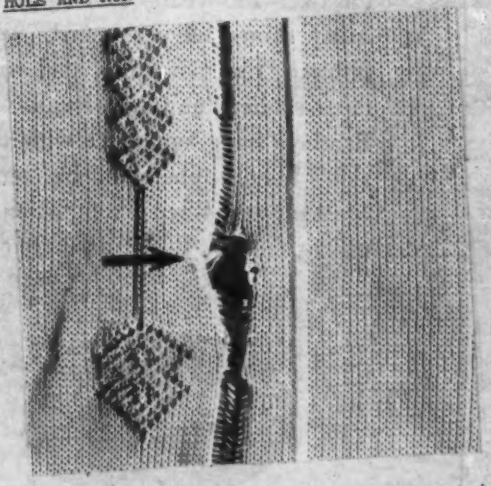


Appearance: Vertical mark or open place in leg of hose. Cause: This particular runner was caused by bad latch on needle. Remedy: Replace needle.

BREAK IN PATTERN

Appearance: Breaking off or termination of decorative pattern. Cause: Decorative yarn breaking or running out due to knots in the yarn, or the operator allowing yarn to run out. Remedy: Piece up ends or put in new cone of yarn and have operator give the machines more frequent inspection.

HOLE AND RUN



Appearance: Hole in leg of hose accompanied by dropped stitch. Cause: Knot in yarn. Remedy: Close inspection of machines by the knitter and use of yarn with as few knots as possible. (Note knot that failed. Indicated by arrow.)

Home of the Pioneer Parachute Co. at Manchester, Conn.

Tradition and Transition

PRODUCING VELVETS, taffetas, crepes, brocades and other lovely fabrics has been the business of Cheney Brothers for over 106 years. During this time many things have changed—women's fashions, transportation, styles in curtains, soldiers' uniforms. But as Cheney Brothers have kept pace with the nation's history, one thing has remained constant—the Cheney reputation for excellent fabrics. Today, as in four previous wars, Cheney skill meets urgent military demands. But vigorous and surprising developments will come during the period after the war. Even now revolutionary new products and services are being planned for this future world we all look forward to.

Meantime, to bring a better peace sooner, there's one plan we can all follow. That is to buy—and keep on buying—War Bonds!

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Mills at Manchester, Conn.

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SAVE That Sheet of PAPER NOW!

HIGHLIGHTS: Need for Economy—Plant Check-Up—Some Ways Mills Save—Plan for Conservation Drive.

TEXTILE PLANTS must practice the strictest economy in the use of paper in order to do their part in helping to secure the 1,000,000-ton reduction in paper use requested by the WPB, as described in TEXTILE WORLD, January, 1944. To do this, the management must sell the idea to its operating personnel by slogans, posters, suggestion systems, and all other means, that paper is a vital material. Even if you believe you are doing your utmost to conserve paper a check-up on the use of paper in your plant and office can probably bring to light ways of saving that can well be practiced at this critical time. (Fig. 1.)

WAYS OF SAVING. Some ideas practiced by a number of mills in the South follow:

1. All shipping containers in which rayon yarn, cotton yarn, etc., are received, whether made of paper or wood, are opened carefully and either reused for shipping cloth or returned to the supplier for reuse.
2. Empty cones, cartons, and trays are preserved and returned to the yarn shipper for reuse.
3. Second-hand or used cones or tubes are utilized in the plant wherever practical.
4. Any empty cones or tubes that cannot be used or returned to the original shipper are sold to dealers who rework and sell them to yarn mills.
5. Paper containers that are smooth inside to avoid the use of paper for lining, may be purchased.
6. Cone and tube wraps may be used over and over again.
7. Paper linings from cases of yarn shipped to mill may be used for baling cloth.
8. Weight or width of gummed paper at the slasher may be cut down.
9. Type carbon copy on back of letter being answered.
10. Use short memo and carbon in answering mail within the organization.
11. Reuse manila envelopes as often as possible.
12. Bind and pad old records for scratch pads where back can be used.

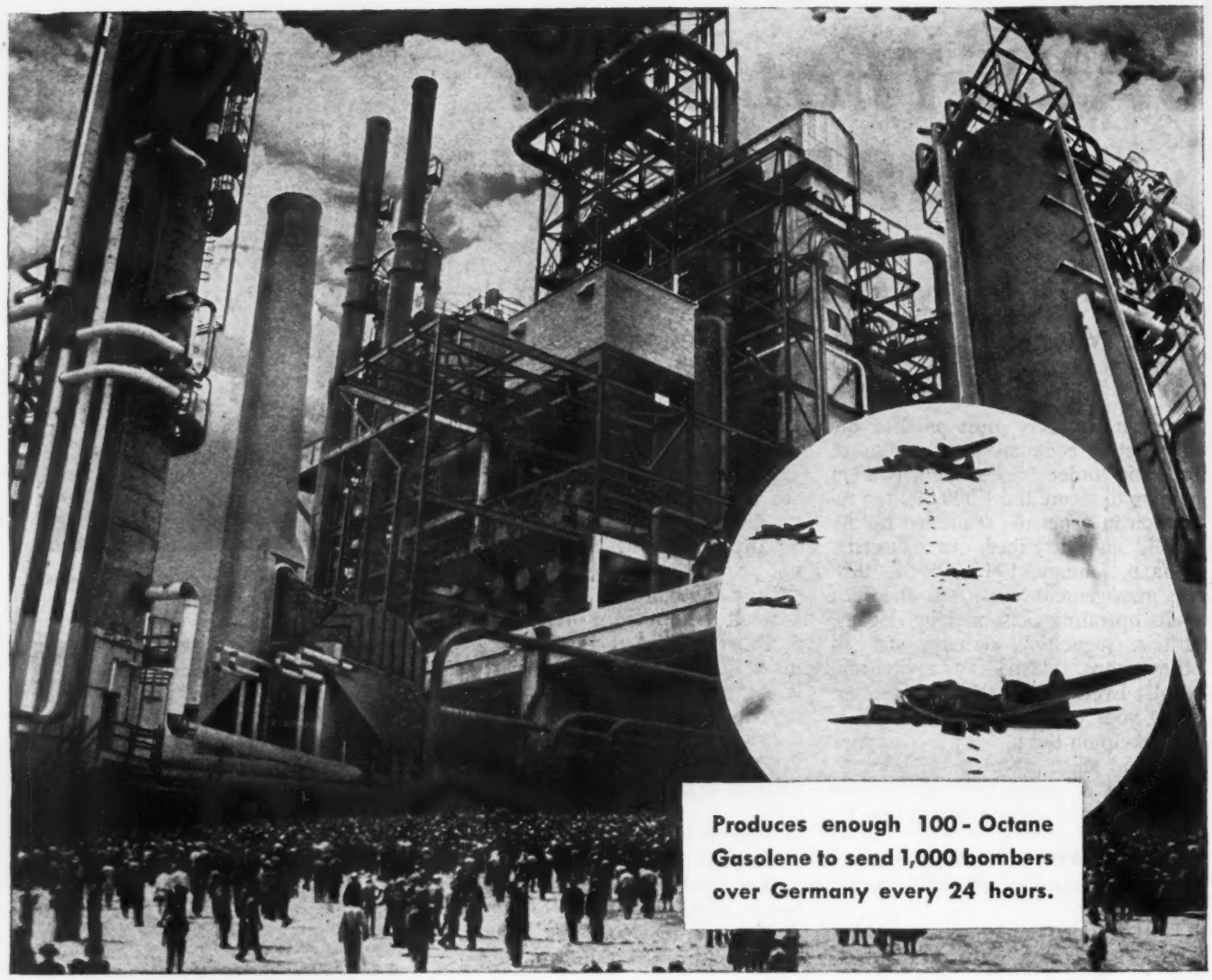
Fig. 2. This cloth room uses old paper from yarn cases to bale cloth.

Fig. 3. Another mill has been able to use lighter and narrower gummed tape to secure ends on the slasher.

PAPER CONSERVATION CHECK-UP

Types Paper Used	Specification	How Used	How to Conserve	Remarks
Wrapping Paper	60# 40 in.	To wrap laps	Use reclaimed kraft	Have waste house. Sort and grade usable paper
Wrapping Paper	60# 48–72 in.	To wrap cloth rolls and line cases	Try to get customer to take cloth and yarn in unlined cases	
Gummed Tape	60# kraft	To lease ends on wrapper and slasher; to seal cartons	Reduce width and weight	
Cone and Tube Wrappers		Wrapping for individual package	Use for own interplant yarn shipments. Use lowest grade obtainable.	
Tubes	Large inventory of assorted sizes and colors	For winding yarn package; for cloth rolls on loom and in clothroom	Use again where not shipped. Reduce inventory of tubes; sell obsolete ones. Use lighter tubes where possible	Get customers to sell tubes back to mill if possible.
Baling Paper	60# kraft	To cover ends of bale; to line the rolling boxes	Use reclaimed kraft from yarn cases	
Cases and Cartons	Various sizes	For yarn, cloth rolls and folded cloth	Use all cases, wood or paper, of the mills' standard sizes. Others return to shipper	Some shippers ask for their cases back
Forms and General Office Stationery	Large assortment to suit plant needs		Pad old forms for notepads. Use back of incoming letter for carbon copy	

Fig. 1. A detailed survey of paper utilization can help in organizing a paper saving drive.



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dedicates one of the world's largest 100-Octane and Butadiene Plants

WITH THIS giant plant at Lake Charles, Louisiana, Cities Service, in cooperation with the Government, takes a tremendous stride toward meeting two most vital war needs.

Sired by the necessity of War, the plant means more power to the armed forces, for it turns out great quantities of high-octane aviation gasolene and ingredients for synthetic rubber.

Created from the ground up, it includes the very latest discoveries and inventions; and it is wholly dedicated to bringing the War to an earlier close. This great accomplishment is an outstanding example of what can be achieved by the winning team of Government and Industry . . . working together, shoulder to shoulder, in the battle for Freedom and Peace.

GASOLENE POWERS THE ATTACK—*Don't waste a drop!*

✓CHECK LIST OF OUTSTANDING FACTS . . .

1. The Refinery produces enough 100-Octane Gasolene to send 1,000 bombers over Germany every 24 hours.
2. Ten per cent of the Nation's normal rubber demands will be supplied by the Government-owned Butadiene Plant, operated by Cities Service, and the Government-owned rubber plant, operated by Firestone.
3. The Refinery alone covers 600 acres.
4. Powered by enough electricity to light a city of 250,000.
5. 275,000 gallons of water per minute are pumped into the refinery.
6. 25,000,000 man-hours went into its construction.

CITIES SERVICE OILS — ONCE-ALWAYS

FREE: Handsomely illustrated booklet about one of the War's biggest industrial achievements. Write Cities Service, Sixty Wall Tower, New York 5, N. Y.

Dedicates VOCATIONAL School

HIGHLIGHTS: Gov. Broughton Speaks at Exercises at Belmont, N. C. — School Operating Since September.

OFFICIAL DEDICATION of the North Carolina Vocational Textile School, near Belmont, N. C. was held at the school June 3. Governor Melville H. Broughton, of North Carolina, addressed the assembly of visitors many of whom were textile executives who had an active part in establishing the school. This school, supported by state appropriations and countywide subscriptions, has been in operation for some time under the direction of the board of trustees, an advisory board, Martin L. Rhodes, superintendent, and T. W. Bridges, principal. It is designed to furnish textile training to textile employees in Gaston and Mecklenberg counties. Six students, who had completed the carding and spinning courses since the school opened, received certificates at the exercises.

Governor Broughton in his address gave credit to various men for their efforts in behalf of the school, especially mentioning Carl A. Rudisill, Gregg Cherry, and O. M. Mull for their work in the legislature on behalf of the school. He emphasized the need for such training, and said that returning service men could attend such vocational institutions. He foresees an expanding cotton-textile industry postwar.

Guests attended luncheon at the Belmont Community Building, with R. D. Hall, of Belmont, as master of ceremonies.

The site on which the textile school stands was donated by Belmont interests. A fund exceeding $50,000 was raised by a county committee to match the original state appropriation of $50,000 provided in a bill co-sponsored by Carl A. Rudisill, Cherryville textile executive, then serving in the House of the North Carolina Assembly. Since that time there have been additional state and federal appropriations.

W. L. Balthis was chairman of the committee which raised the fund to secure location of the textile school in Gaston County. Other members of the committee included Kay Dixon, treasurer; Brice T. Dickson, secretary; C. A. Rudisill, of Cherryville; D. R. LaFar, Marshall Dilling, and B. B. Gossett, of Gastonia; S. A. Burts of Gastonia and Bessemer City; C. C. Dawsone, of Cramerton and A. C. Lineberger, Jr., Dave Hall, both of Belmont.

The school began to function on Sept. 1, 1943, with high-school pupils from Mecklenberg and Gaston counties, as well as adults employed at various mills. Students devote three hours daily to textiles, part in classrooms studying theory of processes and methods, and part in operating machines related to the classroom studies. Each student attends regular high school for one-half the day. Credit is given toward a high-school diploma for successful completion of the work in the textile school.

Elasticity Measured by SOUND

HIGHLIGHTS: Sound Waves Determine Elasticity of Nylon, Rayon, Wool, and Linen Yarns.

TESTING NYLON YARN by sound waves was reported by Dr. J. W. Ballou and Dr. Shirleigh Silverman, two Du Pont scientists, before a recent meeting of the American Acoustical Society.

The experiments reported were carried out on textile yarns and on various types of cellophane. The elasticity, measured by 10-kilocycle (10,000 cycles per second) sound waves, is expressed as Young's modulus of elasticity, which indicates the extent to which a material is elongated when a stretching force is applied. The usual method of measuring this factor in yarns has been to hang a weight on the yarn and note the load required to bring about a certain amount of stretch. This slow application of the force, or load, often produces permanent deformation.

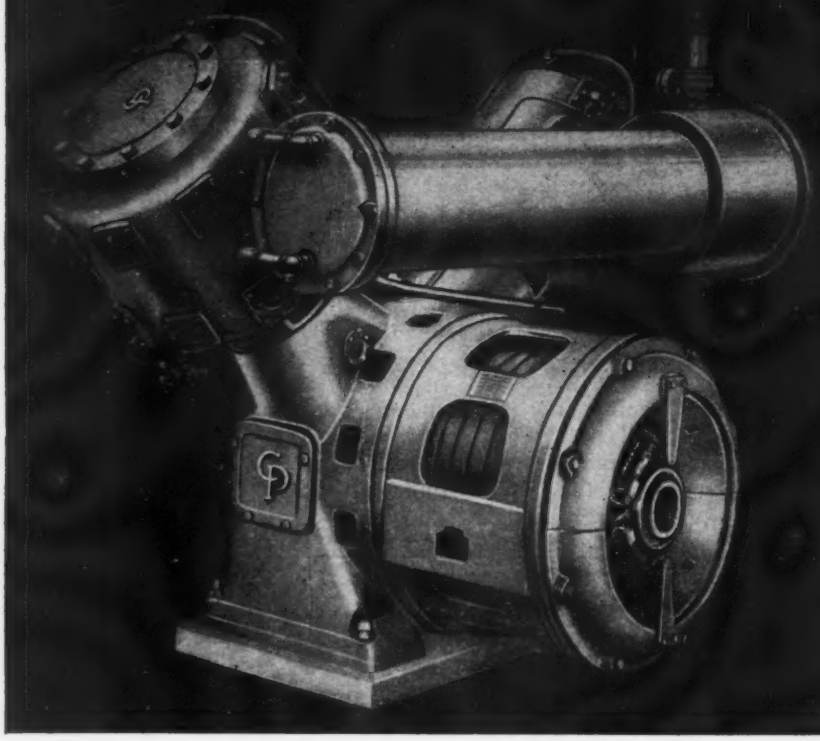
To find the value of the elastic component alone, it is necessary to apply a small force rapidly—in other words, stretch the material so little and so quickly that it doesn't have time to get permanently out of shape. Passing sound through a fiber or yarn accomplishes this purpose. The sound causes the material to go through rapid stretching and recovery as it vibrates.

Since velocity of sound through any medium—whether it be air, water, rayon or nylon—is determined by its density and its modulus of elasticity, it is necessary only to determine how fast sound passes through the test material (the density of which is already known) to calculate its elastic modulus. The Rayon Technical Division apparatus, therefore, is set up to measure the velocity of sound through the yarn.

To one end of a horizontal bar of steel, about 8 in. long, is fastened the test yarn. The other end of the material is strung over a pulley and held taut by a weight. When a radio-tube audio oscillator is turned on, the steel bar vibrates at the 10-kilocycle frequency, emitting a very high note. The sound energy passes along through the test yarn, which in turn vibrates like a violin string. The wave-length of these vibrations is accurately measured with a sliding crystal; and this figure, with the frequency (which is known), enables one to calculate the velocity of the sound.

"The method," Drs. Ballou and Silverman said, "gives elastic modulus values two or three times those obtained with the slow loading or static method and more closely reproduces the type of strain which will be imposed on many materials in actual use." The apparatus is simple and can be placed in a closed chamber for measurement of the modulus under a wide range of temperatures and humidity.

SHIPPED INTACT
Quickly Installed



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GOVERNMENT'S NEEDS Rise

HIGHLIGHTS: Third-Quarter Requirements for Cottons 25% above Current Production — FEA Calling for Wool Goods and Knit Goods—UNRRA May Take Surplus.

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

WITH UNOFFICIAL ESTIMATES of requirements for cotton broad-woven fabrics running at least 25% in excess of current production, the Textile Bureau of the War Production Board is confronted with a major job of balancing supply against requirements.

MILITARY NEEDS. Military requirements for the third quarter are unofficially estimated to be higher than for either the first or second quarters. Demands for certain fabrics will exceed current production, necessitating substitutions where possible. Duck, especially shelter tent and army duck, accounts for much of Army's increased needs. Indications are that Army could use more than three times the amount it received during the second quarter. In carded cotton fabrics (except duck), the heaviest requirements will be for sheetings, surgical bandages, and cheesecloth (estimates the given as high as 148 to 150 million yards). Requirements for fine cotton fabrics will not run as high in the third quarter (according to unofficial reports), with the exception of poplins and broadcloths, especially wind-resistant poplins.

Navy's requirements will be heaviest, it is expected, in duck, twills, and gabardines; print-cloth-yarn fabrics; denim, cottonade and pants coverts; and chambray and shirting coverts.

Civilian requirements for the third quarter have not yet been specifically worked out, but Dr. William Y. Elliott, new head of the Office of Civilian Requirements, will not get the allocations out of the overall pool that he would like to have.

EXPORT ALLOCATION. The overall allocation for export for the first six months of 1944 was 433,000,000 linear yards of cotton textiles, or 8¾% of the total estimated production. The recent amendment to Conservation Order M-317 provided for increase in the quantity of goods to be "set aside" for export. Further amendment on July 6 revised these figures.

To prove that export is small as compared to production, FEA points out that only one-half of 1% of our total estimated production has been allocated for all essential civilian needs in liberated areas, including relief. Only 2% of our estimated production has been allocated for lend-lease, and almost all of the lend-lease civilian-type textiles are being paid for by the countries receiving them. The entire balance of the export quota is to take care of straight commercial exports (a large portion having been assigned to Canada).

As for third-quarter cotton-textile requirements of FEA, indications point to marked decrease as compared to the second quarter, attributed in part to screening by FEA and in part to increase in cotton exports from Brazil and Mexico. (Requirements do not include any that may be submitted later on for China and for Russia.) Cotton-textile requirements for lend-lease, commercial, and foreign relief are estimated to total from 114 to 115 million linear yards of cotton broad-woven goods for this period.

For the remainder of the year, lend-lease procurements are likely to decline and commercial exports to increase. During this period, it is estimated unofficially by FEA, lend-lease will total 20% of exports, as compared with 35% in the first six months. It is expected that Army foreign-relief procurements through FEA will be practically completed during the third quarter. Emphasis in the third and fourth quarters will be placed on wool goods and knit goods.

USED CLOTHING. A large part of FEA Army relief requirements will be met through second-hand garments bought commercially in a national drive, and through extensive projects conducted by FEA and War Department to reclaim and to recondition used Army clothing. This reclamation program is well under way. Goods are repaired and re-dyed dark colors. The government is prepared to buy from commercial second-hand clothing markets 4½ million dollars' worth of clothes.

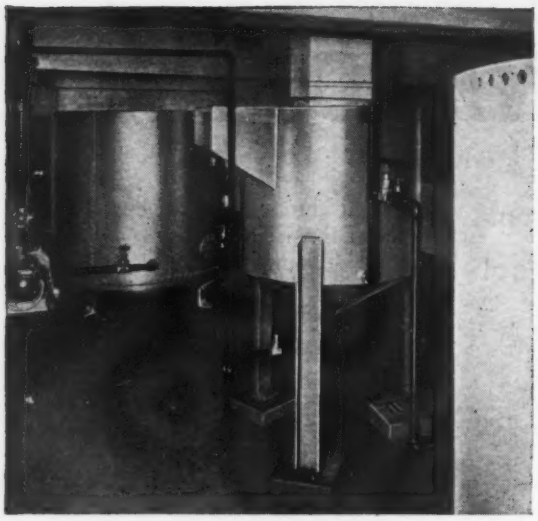
At present, it is impossible to set aside from new production an adequate supply of cotton, rayon, or wool textiles for future use of United Nations Relief and Rehabilitation Administration. The needs of UNRRA for cotton broad-woven goods for its first six months will be fully 950,000,000 linear yards.

The maximum yardage that can be diverted to this agency for the remainder of 1944 out of current production is 20 to 25 million yards per quarter. However, this amount added to purchases which the Army made for relief during the period of military occupation is likely to take care of the most pressing needs as long as fighting continues. Huge quantities of goods will be needed when hostilities end.

Textile Bureau officials expect that there will be some Army surplus stocks available at that time. Also, they point out that from the attitude of retailers and wholesalers now, there will be stocks of civilian goods which owners will want to liquidate quickly. For the most part these goods are so-called "ersatz" merchandise, which is usable but not the quality usually sold to consumers in this country.

The Textile Bureau believes that UNRRA should be in a position to buy this merchandise when it is offered at sacrifice prices. The Textile Requirements Committee is understood to be considering an overall program for UNRRA's purchasing approximately 300,000,000 yd. of cotton broad-woven goods either in piece or as garments, at such times as it can be accomplished without disturbing more urgent programs. However, when and how this may be accomplished it is impossible to say now. (At the time of writing this article, UNRRA is still awaiting U. S. government funds to operate.)

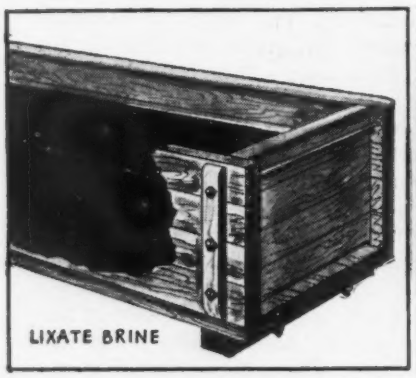
Up to date, whatever buying has been going on is for FEA to be used by the Army's military government. It should be noted that under the present setup, UNRRA will not be permitted to operate in an ex-enemy country.

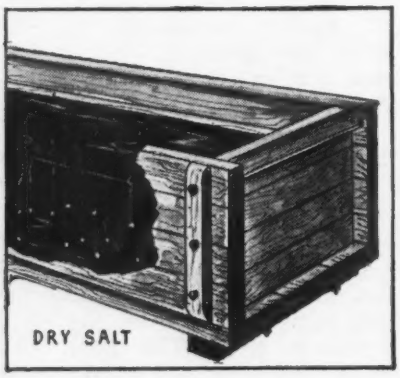


"This is the Lixator installed by Millbury Woolen Co. at their plant in Millbury, Mass."

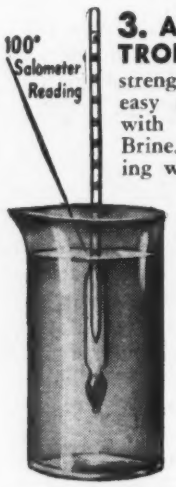
Level Dyeing with LIXATE BRINE and Salt Savings up to 20%!

1. GRAVITY WORKS FREE of charge for you in the Lixator, automatically producing *100% saturated* brine of *crystal clarity*. Mechanically perfect, the Lixator cuts costs, too—saving up to 20% salt; utilizing economical Sterling Rock Salt. Installation requires no heavy investment.



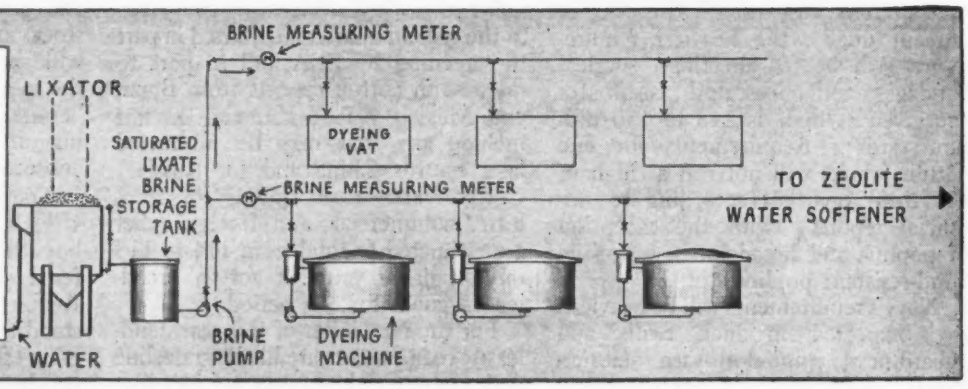


2. LIXATE BRINE DISPERSES EVENLY throughout the dye bath. Being liquid, there can be no salt grains as in "dry salt" operations to cause local over-concentration. Lixate Brine helps eliminate spotting, streaking and white edges. No undissolved salt settles to the bottom of the vats to be wasted when the dye baths and rinses are dumped.



3. ACCURATE CONTROL of desired brine strength in the dye bath is an easy matter when you start with *100% saturated* Lixate Brine. And a salometer reading will always give proof of Lixate's 100% saturation in contrast with ordinary brine. Make tests at any time—the brine is always saturated! A definite volume of brine draw-off always means a definite quantity of salt.

4. TURN A VALVE . . . Lixate Brine is instantly on tap wherever you need it in your plant. There are no production interruptions; no labor wasted transporting dry salt throughout the plant. No labor is wasted, either, in producing *automatic* Lixate Brine. And in addition to labor savings you save up to 20% salt.



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FIXING Hosiery MACHINES

FULL-FASHIONED MACHINES—CHAPTER XXII

THE READING AUTOMATIC WELT TURNER

By Walter A. Simond

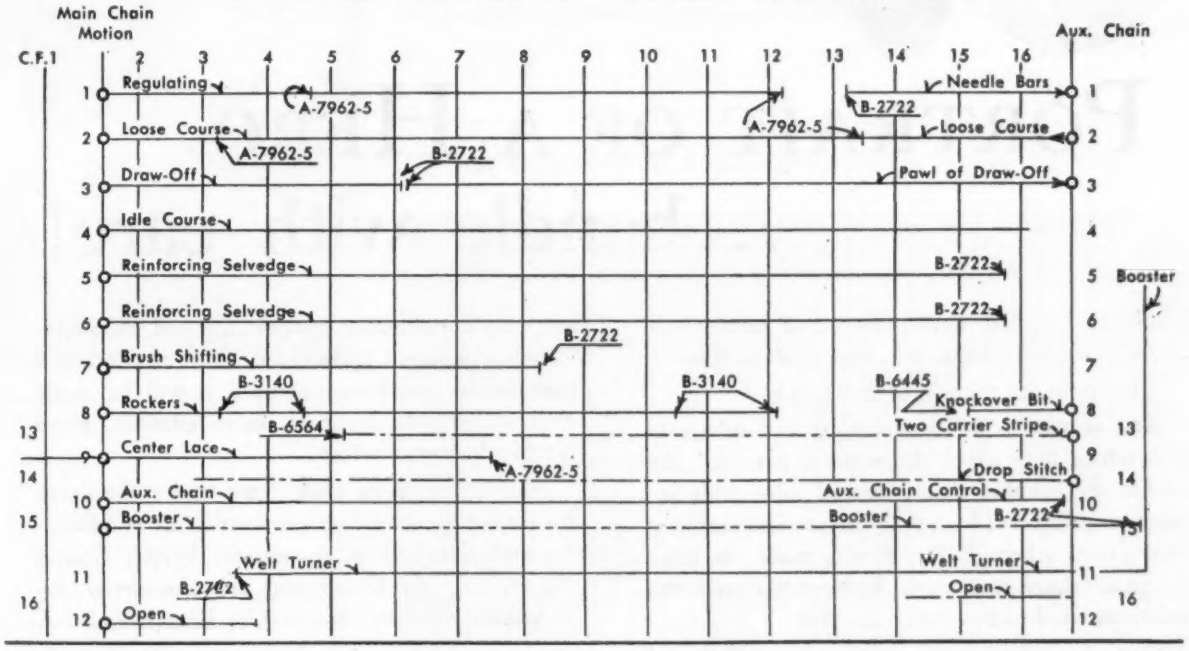
THE AUTOMATIC WELT TURNER is a precision mechanism and its correct operation depends upon correct installation and careful maintenance of adjustments. Machine-fixers must be provided with the following numbered gages:

Two 15650 gages for the sinker heads, a 15651 gage for the distance between the lower part of the needles and the front-bed, gage No. 15652 for the catchbar, No. 15654 for the distance between the upper part of the needles and the front-bed. The above numbers are for replacement gages. Nos. 15816 for the buttons on the auxiliary chain motion, 16319 for the reel-shaft on machines with the hook-up or welt turner, 16329-1 (2) for the welt bars and to square the welt-bar bridges, 16382 for the buttons on the main chain motion, 16388 for the space between knockover bits (.085 in.) and sinkers (replaces gage No. 1182), 16435 for the welt-bar guide on the bridges, 16482 for the needle-bar layout levers, 16488 for the idle course levers and the welt-turning cam rollers, and a tool W-42 to facilitate attaching the steel bands for the welt-rod draw-off straps, should also be contained in the fixer's tool kit.

The rod layout, Fig. F76, shows how the rods are arranged and connected to operate the various mechanisms of a 30 section in proper sequence by buttons on the main and auxiliary pattern chains.

When rechecking the position of the needle bars in relation to the front-bed, the regulating motion should set on a No. 20 button for 51-gage, No. 18 for 48-gage, and a No. 16 for 45 gage, with the star at center of the plunger.

ROD LAYOUT FOR MAIN AND AUXILIARY CHAIN MOTIONS



MAIN CHAIN MOTION

Row on Sprocket	Connects to Rod No.
1. Narrowing	
2. Counter	
3. Stop Switch	
4. Reinforced Selvedge	5
5. Reinforced Selvedge	6
6. Draw-Off	3
7. Brush Shifting	7
8. Loose Course	2
9. Lace Control	
10. Rockers	8
11. Idle Course	4
12. Regulating	1
13. Booster (Welt Turner)	15
14. Auxiliary Chain Control	10

AUXILIARY CHAIN MOTION

Row on Sprocket	Connects to Rod No.
1. Open (Chain Stop)	
2. Pawl of Draw-Off	3
3. Two Carrier Stripe	13
4. Loose Course	2
5. Drop Stitch	14
6. Needle Bars	1
7. Open	15
8. Knockover Bit Shifting	8
9. Heel Course	16
10. Open	9
11. Open	
12. Back Racking	
13. Sole Narrowing	12
14. Storage (If used)	7

PORTRAIT OF A HERO
...handle with care!

Many a wounded hero will come home well and strong again, thanks to a thin sheet of film...

Thanks to the miracle of the X-Ray . . .

And thanks to air conditioning and refrigeration which help make the miracle possible! *Air conditioning* supplies clean, filtered air—with accurate regulation of both temperature and humidity—in plants where X-Ray film is made, in army hospitals where it is used. *Refrigeration* cools the solutions used in processing the film.

Out of such wartime applications, General Electric is evolving new techniques, finer equipment for conditioning temperature and humidity. When equipment again is available for peacetime commercial and industrial uses, it will be vastly improved—more compact, more efficient, more flexible than ever before!

Now . . . we'll be glad to put your name down for *earliest available* data on postwar air conditioning and refrigeration equipment. Write: *General Electric Co., Air Conditioning and Commercial Refrigeration Divisions, Section 426, Bloomfield, N. J.*

☆ BUY WAR BONDS ☆

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GENERAL ELECTRIC

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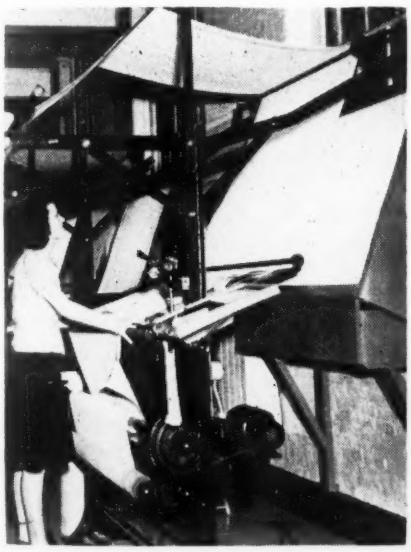
TEXTILE Equipment NEWS

MACHINERY AND SUPPLIES

Fluorescent Fixture for Inspection Perch

A new fluorescent lighting fixture has been developed by Sylvania Electric Products, Inc., 500 Fifth Avenue, New York, for mounting in the perch.

The unit consists of a wooden box



Fluorescent inspection fixture installed in a perch (Sylvania Electric)

4 ft. long, 3 ft. wide and 1-ft. deep and contains eight 40-watt fluorescent lamps. The face of the box is a large sheet of opal glass which diffuses the light so completely it is not possible to tell how many lamps are beneath it. Alternate lamps may be extinguished to reduce the brightness, without causing any noticeable shadows on the glass.

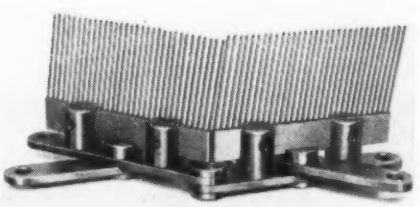
Lamps and ballasts are mounted on the back of the box, easily removable for servicing. Installation is a simple matter of mounting the fixture where wanted in the perch and plugging the extension cord into a current outlet. Advantages of the Sylvania T-1 inspection fixture are that it reduces heat, glare and overcomes uneven, spotty light obtained from incandescent lamps.

The fluorescent device is used for inspecting various types of cloth in the gray, and has been used in mills to displace two former inspection methods —viewing the cloth stretched across the face of a window opening on the north and across a horizontal, flat-bed using incandescent lamps. Tests indicate that each operator's daily output has been increased from 20 to 25% when using this fixture.

Improved Slasher Comb

A slasher comb having the dents set at a slight angle instead of being perpendicular, has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston. It is stated that with the dents set in this position a better laid warp is possible as the thread from each section beam passes through the comb at a different level.

With the dents set at an angle, the



Improved expansion comb section in fully extended position (Saco-Lowell)

ends of yarn from the different beams are held in a definite plane, and they remain in proper array until they are in contact with the surface of the binder roll and fixed in position by the nip of the binder roll and the drag roll. This control of the ends prevents them from rolling or crossing. With this new comb it is possible to place more ends in a dent than with the conventional comb. By using the new comb, the total number of dents can be reduced since the crowding of the ends is eliminated as each end is forced

HIGH-FREQUENCY HEATING SETS TWIST IN TIRE CORD

All tire cord manufactured by Industrial Rayon Corp. is subjected to high-frequency heating by passing 18-lb. rayon cones through a high-frequency electric field. Equipment was furnished by Thermes Div., Girdler Corp., Louisville, Ky. Each unit has an output of approximately 22,500 B.t.u. per hr. and is capable of handling several thousand pounds of packaged tire cord in a 24-hr. period.

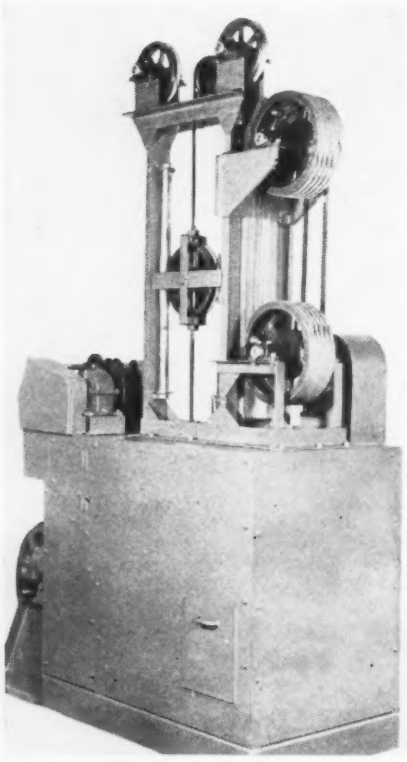
to travel in its own particular plane. Another very helpful characteristic possessed by this new comb is the ability to eject from the warp-sheet any small accumulation of lint or waste or dry size that travels on the warp sheet.

Comb sections are furnished with 20, 25, and 30 dents which may be inserted in the standard 4-in. comb-chain section, or may be obtained with complete chain section.

Wind-up Machine for Impregnating Fabrics

A wind-up machine that may be used for coated fabrics has been developed by Industrial Oven Engineering Co., 11621 Detroit Ave., Cleveland.

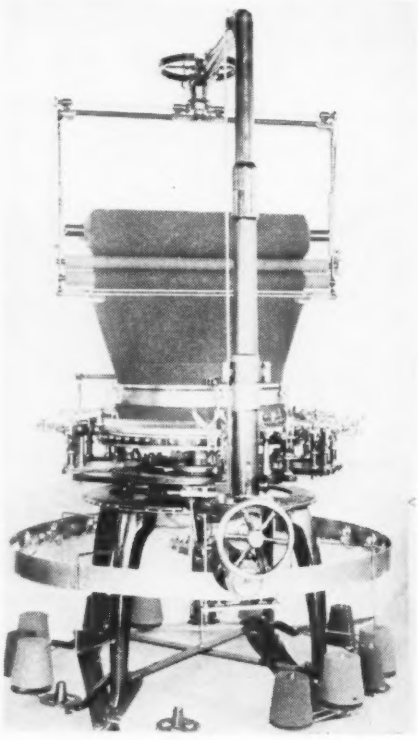
Originally built in connection with this firm's cable lacquering equipment and designed to meet strict Army-Navy specifications for finishes in impregnation and coating of wire and cable insulation, the wind-up stand is the only one of its kind, and is now available in two standard sizes. It may, however, be used for the coating of textile fabrics. The unit is complete and self-contained with combination variable speed and hydraulic synchronizing equipment designed to provide constant speed and constant tension within a variable production range. By arrangement of adjustable counterweights, tension can be varied from a few ounces to hundreds of pounds. Unwind stands are also supplied in standard sizes for semi-automatic operation. The operator simply rolls the reel or beam into position and steps on a foot pedal to raise the reel and set a counter-weighted tension brake simultaneously.



Machine for winding impregnated fabrics (Industrial Oven)

Spring Needle Knitting Machine

A new single-head, spring-needle machine known as the S-1, has been designed by Tompkins Bros. Co., Syracuse, N. Y., for knitting overcoating materials. Other types of fabrics which could be knit on the older type spring needle table may also be knit on this machine. Production on overcoating materials is approximately 100 yd. per 8 hr. day using 6 feeds, it is stated. The machine is equipped with an electric yarn stop-motion and a needle-stop motion. A V belt drive from an individual motor is used.

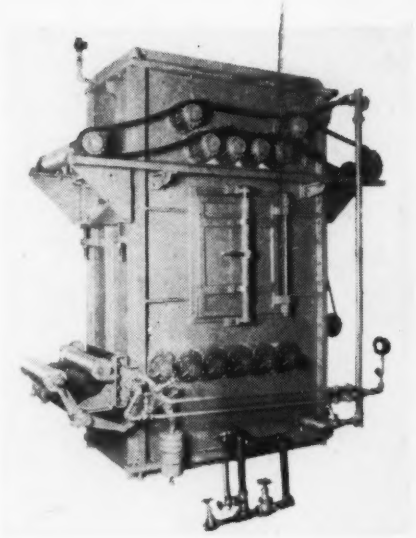


Spring needle machine for knitting overcoating materials (Tompkins)

Ager for Laboratory

An ager, suitable for carrying samples of various synthetics through a steaming process, has been developed by H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia 25.

Samples to be developed are conveyed through the machine on an endless blanket. The blanket is equipped with an adjustable tension device. Construction of the bottom of the ager, which has a steam-coil and the necessary baffle plates, insures against splash from the boiling liquor coming in direct contact with the cloth. A steam-chest at the roof of the machine eliminates possibility of condensation dropping on the cloth. The laboratory ager can be heated with dry or saturated steam. Top rolls in the ager are mounted and driven in anti-friction bearings. Lower rolls are mounted in anti-friction bearings but are not driven. A variable-drive motor allows goods to remain in the ager from two minutes up to six minutes—the usual time required for developing various types of vat colors.

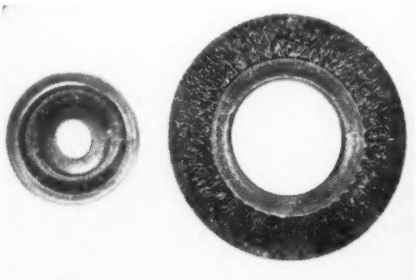


Ager developed for laboratory use (Butterworth)

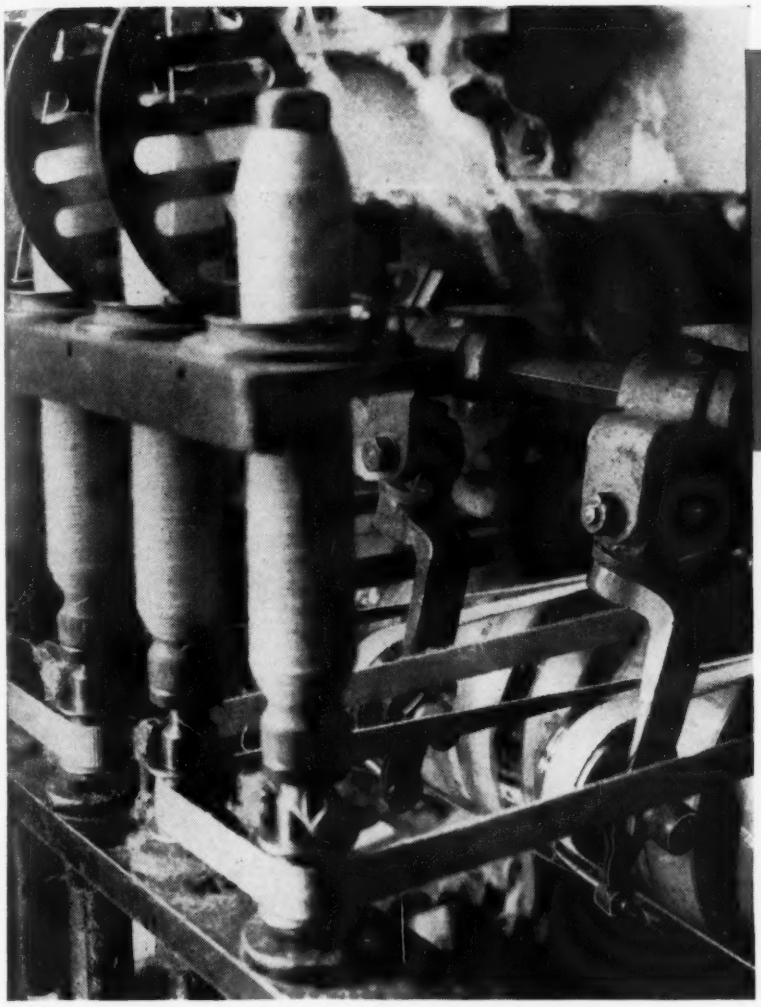
Power Brush Removes Rust from Reeds

Rust and old enamel may be removed from reeds by a power brush developed by The Osborn Mfg. Co., 5401 Hamilton Ave., Cleveland, Ohio.

Removal is effected by bringing the surfaces of the reed into contact with wire brushes. The brushes are mounted together on a special power-driven arm



Brushing wheel for removing rust from loom reeds (Osborn)



Ball Bearing Tape Tension Pulleys

Complete Service for any Application

Tape tension pulleys should run freely—the reason why ball bearing tape tension pulleys are preferred equipment on any spinning frame or twister frame. Ball bearing tape pulleys insure minimum drag, freedom from wear, and are sealed against lint or fly. They reduce breakage, after shut-downs and in poor weather, resulting in more production. They save power and lengthen tape life. There are no "ends down" from pulleys sticking, with ball bearing pulleys on your frames. They are also inexpensive to install. One pulley is used for each four spindles reducing the cost to a few cents per spindle. West Point Foundry and Machine offers you a *complete* service. Pulleys in the proper size and specifications for any applications. And we have patterns on hand for brackets for all styles of frames. Let us give you full information, quotations and recommendations on this service.

WEST POINT FOUNDRY & MACHINE CO.

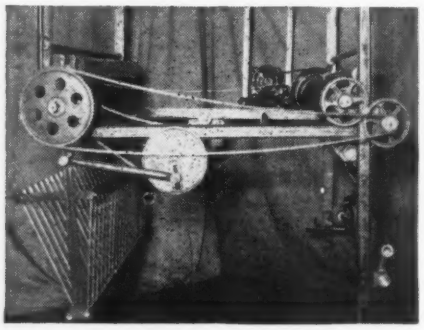
(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

and revolve at 1,800 r.p.m. The reed is pushed back and forth under the brushes until clean. The brush is an assembly of steel-wire sections locked into the hub under great pressure. Diameter is four inches and the wire is No. 33. Special crimping of the wire and proper density of the brush-face provides long service.

After the surfaces of the reed are thoroughly cleaned of old enamel, rust, and other materials, they may be polished in another operation with fine-wire brushes, also power driven.

Combination Brushing and Folding Machine



A combination brushing and folding machine for woolen and worsted fabrics (Birch Bros.)

An overhead brushing and folding machine has been designed by Birch Bros., Inc., Somerville, Mass., for spreading and brushing woolen and worsted fabrics prior to wet finishing. Loose threads, dust, flock, and other foreign matter are removed from the fabric as it passes through this machine so it will not be carried to the fulling mill and felted into the fabric. The fabric, on leaving the machine, is folded uniformly, ready for finishing.

Magnifiers for Cloth Inspection

Magnifiers of the portable and the bench type incorporating a fluorescent daylight lamp, have been announced by Stanley Electric Tool Div., The Stanley Work, New Britain, Conn. These magnifiers are available for use in fabric inspection.

Lenses are 5 in. in dia. with a focal length of 13 in. The fluorescent daylight lamp, which is scientifically focused, distributes natural light over the inspection area without shadow. A rotary light-switch is located in the frame. The bench model has base and frame swivel and friction arm joints which permit movement of lens to any desired position without moving the base. The portable model has a hardwood handle and 6 ft. of cable.

Useful Accessories for Textile Mills

A corrosion-resistant motor which is suitable for operation in atmospheres containing injurious dusts, corrosive vapors or gasses, and excessive moisture, has been announced by Crocker-Wheeler Division, Joshua Hendy Iron Works, Ampere, N. J. The Sealed-Power motor is available in sizes ranging from 1- to 15-hp. and is totally inclosed.

Masonry surfaces may be restored by the use of Waterfoil, manufactured by A. C. Horn Co., Long Island City, N. Y. This product, when applied to concrete, brick or stucco surfaces, reacts chemically with the lime hydrate of the masonry to form a fine, hard, heavy coating.

Reduced battery consumption in the operation of electric trucks is possible by using a simplified four-speed reversing controller for electric and gas-electric trucks, produced by The Elwell-Parker Electric Co., Cleveland 14, Ohio. Resistance is used on the first-speed only instead of introducing resistance on the first, second and third speeds. Additional power saving is obtained by connecting the motor fields in series on the first and second speeds.

Grain scales of approved design with which direct readings can be obtained in 1/10-grain accuracy and with a capacity of 7,000 grains, are being offered by Alfred Suter, 200 Fifth Ave., New York 10, N. Y. Loose weights are not required in operating the scale as the top graduation is equipped with rider; the center graduation with a roller which accurately fits notches; and the lower graduation is provided with pegs from which a weight is suspeded.

Timing mechanisms for temperature or pressure control, made by Taylor Instrument Co., Rochester, N. Y., were suspended soon after the beginning of the war. This equipment is now available for positive time-control of either temperature or pressure for textile-mill installations.

TO KEEP 'EM RUNNING

Checking Compressors for Conditioning Units

Compressors used in air-conditioning units must be checked regularly. The compressor, according to a booklet issued by Carrier Corp., should be kept in first-class condition so that it will do its job of cooling without working overtime.

To prevent leaks of refrigerant, check compressor head-bolts for tightness at regular intervals. The head-bolts are those on the top of the compressor cylinder and may be identified as those which "hold on the lid."

Watch for oil dripping from shaft seal (where the drive-shaft enters the compressor). Noticeable dripping of oil indicates a leaky seal. If the leak is caught in time, the seal is repairable at the factory.

Check the oil-level of the compressor. On some compressors the level of the oil may be seen through a bull's-eye. On other types of compressors, a pet-cock is opened to check oil-level. The oil will flow from the pet-cock if there is an adequate amount. If oil-level is low, the attention of an expert service engineer is required.

If the capacity of the compressor has fallen off so that the full quantity of cooling is not being obtained, an expert service engineer should be called.

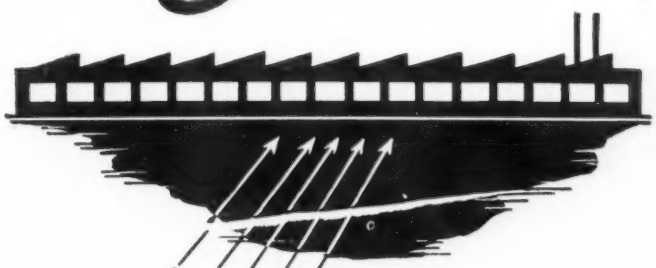
If the compressor develops a knocking noise, shut-down the unit immediately before damage can occur and call the service engineer.

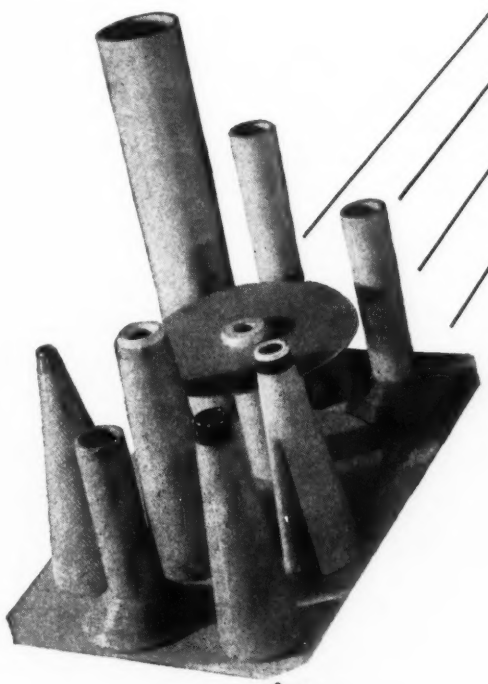
When Motor Fails to Start

Occasionally an electric motor may fail to start and, under such conditions, the following points, as listed by Century Electric Co., should be checked when a repulsion-start, induction, single-phase motor is involved.

1. Check for voltage at motor terminals —Use test lamp. Check for blown fuses or open overload device in the starter. If motor is equipped with Fusetron see that the fuse plug is not open and that it is screwed down tight. If motor is equipped with micro-switch, test

Backing up the Services of Supply – !





. . . . . on textile paper carriers, SONOCO is discharging a heavy responsibility. Realizing that 90% of our products are either directly or indirectly concerned with the war effort -- we have thus far managed to keep our own service record intact as a Dependable Source of Supply. Practically no lost time in textile production has been due to shortage of SONOCO Products.

When it is remembered that textile production has reached unprecedented levels in this war, plus the fact that SONOCO Carriers are made of *paper,* we feel entitled to take pride in our accomplishment.

BUY MORE WAR BONDS

ARMY E NAVY

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

A CRITICAL NEED
SAVE
WASTE PAPER

sonoco
SERVES THE WORLD
PAPER CARRIERS

switch as follows: Disconnect motor from line; connect a test lamp between one side of line and lead marked 5; touch other side of line to lead marked 1; if micro-switch is closed, lamp will light.

2. Low Voltage—Measure the voltage at the motor terminals with the switch closed. Voltage should read within 10% of the voltage stamped on motor name plate. Overloaded transformers or circuits, or too light a lead-in wire may cause low-voltage. If the former, check with the power company. Overloaded circuits in the building can be found by comparing the voltage at the meter with the voltage at the motor terminals with the switch closed.

3. Open-Circuited Field—These motors have two windings in the field. Test each winding separately. If O.K. the motor will hum and attempt to start. If winding is open, remove to service shop for repairs.

4. Shorted Field—With the brushes raised from the commutator, close line-switch. If any field coils are shorted, they will heat excessively and take excessive current. If shorted, remove to service shop for repairs.

5. Grounded Field—If motor gets very hot, produces shock when touched, or if idle watts are excessive, test for field ground with test-lamp across field leads and frame. If grounded, remove motor to service shop for repairs.

6. Faulty Governor Operation—Brushes must make good contact with the commutator during starting. As the motor comes up in speed the centrifugal force of the governor weights overcomes the spring pressure, forcing the spring barrel along the shaft. The short circuiting segments short-circuit the commutator, and, at the same time, the pressure is removed from the brushes, allowing them to rise from the commutator. The motor, therefore, operates as an induction motor. If, after the governor has operated, the motor fails to come up to full-speed and alternately accelerates and slows down, too great a load, weak governor spring, or low voltage is indicated. The commutator and short-circuiting segments may pit. If pitted, replace short-circuiting segments and smooth commutator with sandpaper. If the governor fails to operate, too strong a spring is indicated.

8. Excessive Load—Excessive load may be approximately determined by checking the ampere input with the name-plate marking.

9. Tight Bearings—Test by turning armature by hand. If adding oil does not help, bearings must be replaced.

10. Check for worn brushes—Short brushes cannot be pressed against the commutator during starting period. Check brush setting.

PRODUCTS & PROCESSES

Latex Used in Water

VINYL CHLORIDE EMULSION; B. F. Goodrich Co., Akron, Ohio.

Production of a true latex of vinyl chloride resin without using costly and dangerous solvents has been announced. In the new latex, Geon resin is dispersed with water, instead of with the flammable and toxic solvents formerly used. It can be adapted to a wide variety of uses in coating textiles, wires and other materials, and in film manufacture. In many respects it promises superior performance over other materials.

It is claimed that the new latex can be processed with existing equipment and that it can be made to conform to fiber structure, thus allowing the materials treated to "breathe." It can also be applied as a flexible, impervious coating. In clear or colored form, it can be brushed, sprayed or dipped.

Fire Retardant

ZINC BORATE-3167; The New Jersey Zinc Co., 160 Front St., New York City, N. Y.

The New Jersey Zinc Co. announces this product as a fire-retardant material, especially when used with a number of chlorinated organic materials such as chlorinated paraffin, chlorinated rubber, chlorinated diphenyl, vinyl chloride-acetate copolymers, chlorinated naphthalene and chloroprene. As to its general physical and chemical properties, they state that it is a relatively water-insoluble compound under weak acid or mild alkaline conditions. Under strong acid or strong alkaline conditions, it decomposes to form soluble zinc and boron salts, and hydrolysis is accelerated by an increase in temperature. It is insoluble in the common organic solvents. It is further claimed that Zinc Borate-3167 is not only effective as a fire retardant but also may have a useful fungistatic action, as well as acting as a plasticizing agent with certain rubber-like elastomers.

Creaseproofing Resin

AEROTEX CREAM No. 450; Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J.

Calco Chemical Division has announced (in their Supplement No. 1 to Calco Technical Bulletin No. 448) further information regarding Aerotex Cream No. 450.

Aerotex Cream No. 450 is stated to be a water soluble, partially condensed urea-formaldehyde resin, stabilized and formulated to be set with Aerotex Accelerator No. 187 or other suitable catalysts.

The resin has a comparatively small molecular size and consequently it penetrates the textile fibers. It is fixed inside the fiber cell by completing the polymerization or "curing." The company states it imparts to the fabric crease-resistant, shrink-resistant, and permanent finishes.

Aerotex Cream has found application in creaseproofing finishes of the following types of fabrics:

(a) Spun rayons
(b) Spun rayon and Aralac
(c) Spun rayon and cotton
(d) Spun rayon and acetate rayon
(e) Linen
(f) Cotton voile

Satisfactory results have been obtained with Aerotex Cream No. 450 as an aid in the shrinkage control of rayon marquisettes and various spun rayon constructions, it is said.

The company warns that Aerotex Cream No. 450 is not recommended for the shrinkproofing of cotton broadcloth or for the treatment of similar types of goods which are likely to be given a chlorine bleach treatment by the laundries, since such a treatment unless followed by an efficient anti-chloring will cause tendering of the goods.

Acetate Swelling Agent

ZINC THIOCYANATE, Tennessee Eastman Dyestuffs, 10 E. 40th St., New York.

Zinc thiocyanate, also known as zinc sulphocyanate, is finding use as a swelling agent for acetate cloth. It is used as ingredient of the paste in discharge printing of this cloth.

Your identity is more important than "Naked Jake's"

It's easy to see how "Naked Jake" got his name. When the Scouts went camping . . . before the tents were pitched, Jake was in his birthday suit. Naturally, kids christened him "Naked Jake." "Fire," the signal that skirts were in sight, sent him scurrying to the bushes. He was one of the most popular kids in camp. He's a policeman now—the kids' idol and "Naked Jake" to everyone on his beat.

"Naked Jake" is unmistakably labeled but how about your products? Are they easily identified by customers? Anticipate your highly competitive post-war markets now by planning to use Kaumagraph Products. Developed by over 40 years continuous research, proved in use by most of the leading names in textiles, both in peace and war, Kaumagraph Dry Transfers and Prestomarks make identification a part of any textile product. No matter what fibre, natural or synthetic; no matter what texture, Kaumagraph can give you safe, certain, economical marking.

To get identity that sticks like "Naked Jake's," send for a Kaumagraph Identification Man today!

EMBOSSED SEALS
Embossed seals as designed and produced by Kaumagraph craftsmanship, will enhance the quality appeal and saleability of any good product.

KAUMAGRAPH
Identification Headquarters since 1902

KAUMAGRAPH COMPANY • WILMINGTON 99, DELAWARE • EMPIRE STATE BUILDING, NEW YORK 1, N. Y. • REPRESENTATIVES IN PRINCIPAL TEXTILE CENTERS OF THE WORLD.

Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Your identity will not be published unless you give permission.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

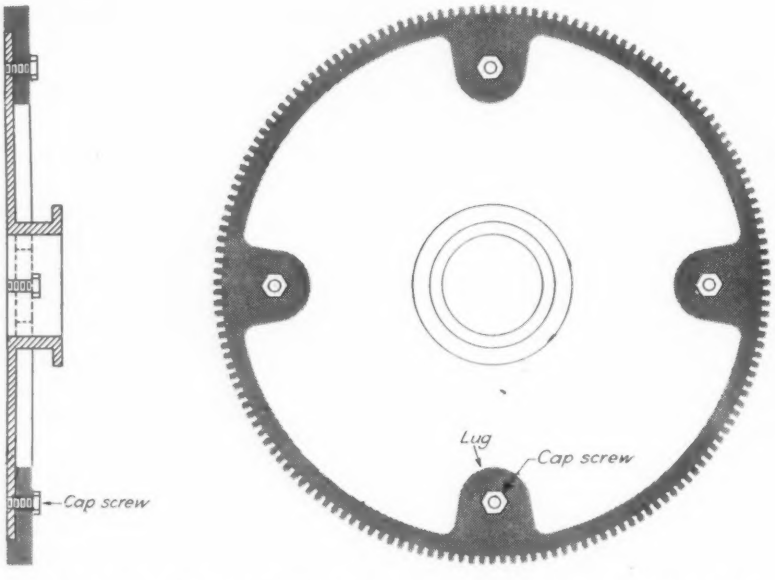
★ **THIS MONTH'S PRIZE WINNER**

Friction Gear Ring Repaired Inexpensively

Accompanying this description is a drawing of a friction ring gear used on frictions of Draper looms at our mill for a number of years. This friction gear has about 165 teeth, is driven by the loom motor, and is the source of power for the loom. In time, these friction gears wear out and ordinarily have to be thrown away. Instead of throwing them away and putting new ones on the loom, we put the old friction gear in the lathe and turn down all the metal comprising the teeth, back to the thin part of the friction gear.

Next, we have made a pattern which consists of a ring gear with four lugs on it. This is put in a lathe and faced out to fit the turned-down friction gear, thus affording a new metal surface on which to cut new teeth. This casting is fitted to the old friction gear by means of four machine cap screws going through the casting and into threads cut into the

(*Continued on page 114*)



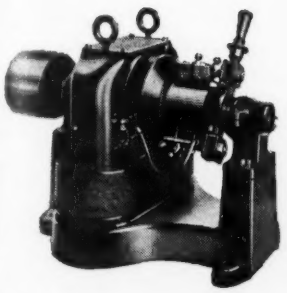
Cast ring (shown shaded) is placed on old friction gear that has been turned down. Ring is then cut.

Fewer Tacks Needed In Cloth Take-up Roll

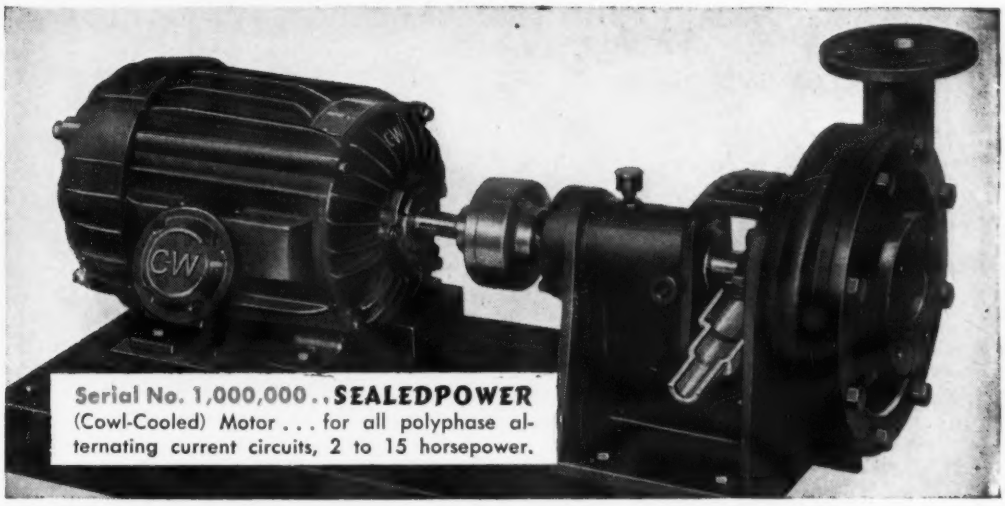
When re-covering cloth take-up rolls, it sometimes happens that the covering bulges at every tack placed in the covering. These bulges naturally cut holes in the cloth.

A good method when covering these rolls is to use tacks only at the start and finish, and, when the roll has been in operation a short time, the cloth itself will take all the slack to one end. The tacks at this end can then be removed, the slack taken up, and the tacks replaced. In this way there will be no bulged parts to cut the cloth.

One man can cover a roll in this manner and can do the covering without removing the roll (*K-186*)



Serial No. 1 . . . Crocker-Wheeler Motor, built in 1888.

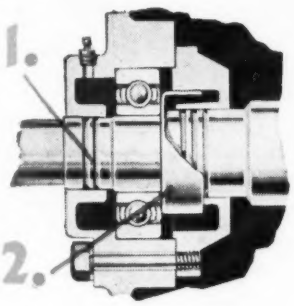


Serial No. 1,000,000 . . SEALEDPOWER (Cowl-Cooled) Motor . . . for all polyphase alternating current circuits, 2 to 15 horsepower.

SEALEDPOWER

Industry's Most Trouble-Free Motor

PRODUCED BY CROCKER-WHEELER'S 56 YEARS OF EXPERIENCE



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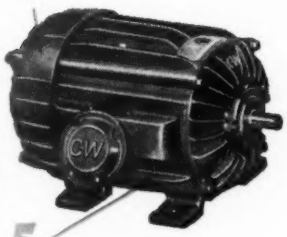

5.

CROCKER-WHEELER FEATURES:

1. Patented "Groovseal"—no greasing needed for at least a year. Grooves minimize grease loss. This seal makes bearing maintenance expense negligible. It permits use of softer grease, for better lubrication and longer bearing life. Airtight seal prevents dust or other foreign matter from entering bearings.

2. Crocker-Wheeler's exclusive De-Sludging Impeller. Automatically desludges . . . churns and distributes grease to bearings when motor is started.

3. Vacuum Impregnation—standard on *all* Crocker-Wheeler motors. Seals out foreign matter and moisture from each individual coil . . . fills all interstices, making windings a homogeneous mass . . . reduces hot-spot temperature and lengthens insulation life. Adherence of varnish prevents vibration of wires either inside or outside of slot. (Photograph shows cross sections of baseballs, (left) after vacuum impregnation and (right) before vacuum impregnation. Note penetration of varnish to center of tightly-wound ball, making it a moisture-proof, homogeneous mass.)

SEALEDPOWER FEATURES:

4. Totally Enclosed Cowl-Cooled Construction resists corrosion. Protects against acid or alkali fumes, splashing or dripping liquids, air-borne moisture, steam, corrosive gases, conducting dusts, metallic chips, etc.

5. Fin Type Construction for non-clog ventilation and easy cleaning.

WRITE FOR LITERATURE ON THE **SEALEDPOWER** MOTOR, WHICH IS WINNING THE PREFERENCE OF MACHINERY MANUFACTURERS AS WELL AS OF MOTOR USERS. OR CALL OUR NEAREST OFFICE.

CROCKER-WHEELER Motors · Generators

JOSHUA HENDY IRON WORKS

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SQUIRREL CAGE MOTORS | WOUND ROTOR MOTORS | DIRECT CURRENT MOTORS | GENERATORS | FLEXIBLE COUPLINGS

KINKS & SHORT-CUTS

(*Continued from page 112*)

Friction Gear Ring Repaired Inexpensively

(*Continued from page 112*)

old friction gear. After fitting to the old friction gear, the outside of the casting is faced off and the whole fixture is put in a gear cutter and new teeth are cut in the new casting. Thus a new friction gear results by using this ring.

We have tried shrinking bands on the old friction gear but this method of using four lugs and four cap screws has afforded good service for over ten years at about one-third the cost of new friction gears. (*K-183*). J. R. Wikle, Magnolia, Ark.

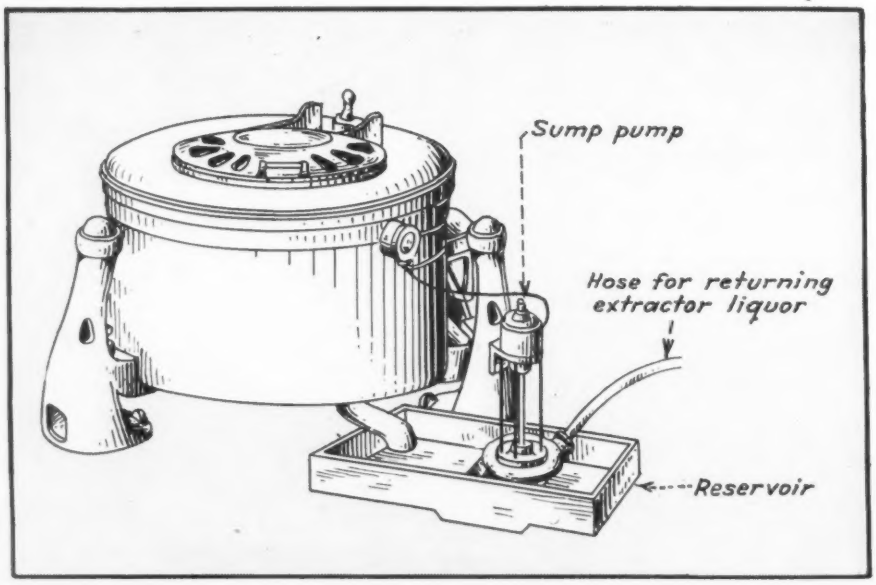
Sump Pump Returns Liquor from Extractor

When soaking rayon for hosiery and cloths except the heavier canton crepes, considerable money can be saved if the extractor liquor is reclaimed. This often is done by means of catching it in buckets and returning it manually to the tubs. This is not only hard to do but also results in some loss because, at the start of the extraction, the flow is very great and buckets must be changed rapidly. Back strains occasionally result.

To overcome these problems, we have had a reservoir built to hold the large flow of liquor which occurs at the start of the extraction, and have installed a sump pump in this reservoir. The pump returns the solution to the proper tub, by means of a synthetic rubber hose. Note in the sketch that there is a deep place in the reservoir to permit practically complete removal. When extraction liquor is to be discarded, the hose is emptied down a drain.

The hose should be made of oil-resistant synthetic rubber so that it will not be attacked by the soaking oils normally used.

The sump-pump motor is wired so that it runs whenever current is turned on to the extractor motor. There is so little drain at the end of the extracting period that all, normally, has been pumped out of the reservoir by the time extraction is complete. (*K-178*)



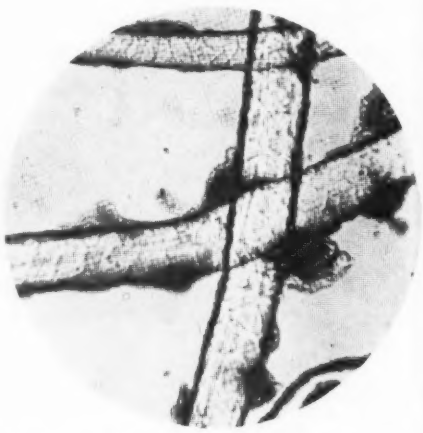
Soaking liquor saved by use of sump pump.

Dye Indicates Oil or Oil-Soluble Materials

In textile finishing, preparation of material for dyeing is important. Practically all textile dyeing is dependent upon the wetting of the material by dyes in water solution. The presence of oil or oil-soluble material will prevent satisfactory results.

Oil-soluble materials can be determined quantitatively by solvent extraction but often in the case of unknown trouble, it is desirable to know how these (fatty or oil soluble) substances are distributed. For this we have found it useful to stain them so that their location and nature can be detected by the naked eye or the microscope. A solution, made by saturating 67% alcohol with Calcogas Red O, is applied to the fiber for a period long enough to dye the oil or "oil-like" matter. The textile material is then washed once or twice in clear 67% alcohol. This concentration of alcohol is enough to dissolve the excess of the oil soluble dye but the 33% water in the alcohol is enough to prevent it from dissolving off the oil.

If the oil-like deposit is unevenly distributed on the material it will show up as red spots, while the entire cloth will appear red, if the oil is evenly deposited.



Dark areas show how dyed wool fat appears under the microscope.

The microscope is useful in making a closer examination of the colored deposits to show how the "oil-like" substance is distributed on or among the fibers. For example, most of the natural fats in raw wool are found as small deposits on the fibers, and not as an evenly distributed film along the fiber. This is shown in the illustration. (*K-188*) From *Dyelines and Bylines*, Calco Chemical Div., American Cyanamid Co.

Check Protectors For Uniform Action

When changing a loom from a heavy woolen warp to a warp of much lighter yarn, it is extremely important that the protector motion be examined in order to see that sufficient protection will be provided so that the shuttle will not stop in the shed, a situation which often causes broken warp threads for almost the entire length of the shuttle. Time lost fixing such a break-out can be considerable.

Greatest care must be observed in adjusting this protection, for it can sometimes happen that there is no protection at all when it appears that there is ample. For example, if when adjusting, the protector daggers strike the breast beam just slightly above the frog, the device might appear to be in good order when the lay is

(*Continued on page 116*)

NO EYEBROWS

. . . when you're running on cork!

OF all textile roll covering materials, cork produces the least clearer waste. And cork has just the right amount of "grip" to carry this waste well back onto the clearer boards—so that *no "eyebrowing" occurs.* That's why, when you're running on Armstrong's Cork Cots, there is no danger of waste accumulations dropping into the work and forming slubs.

Naturally, less waste means the boards don't have to be cleaned so often. Cork's sure grip also results in uniform drafting, stronger yarn, and reduced end breakage.

A high coefficient of friction is only one of the reasons why Armstrong's Cork Cots give you better running work and more poundage.

These cots are extra resilient—they quickly "come back" after grooving by top-roll laps or hard ends. Uniform—they have no soft or hard spots to grip the yarn unevenly. Non-flowing—they maintain a true drafting surface. Tough—they have a long initial service life, and rebuffing gives them three or four extra full-length lives. Each rebuffing costs as little as one-half cent per cot.

These advantages explain why Armstrong's Cork Cots are serving more spindles than any other roll covering. To find out what these cots can do for your mill, see your Armstrong representative—or write to the Armstrong Cork Company, Textile Products Section, 8307 Arch Street, Lancaster, Pa.

BETTER RUNNING WORK

— MORE POUNDAGE

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

KINKS & SHORT-CUTS

(Continued from page 114)

moved by hand, but does not function properly when the lay is operated by power. The lightest touch of these daggers above the frog will bounce the dagger under the frog, thereby failing to protect.

Both protectors must be in unison with each other. If a protector on one side does all the protecting, damage will soon result.

In order to make the daggers even with each other, the protector fingers must first be taken off. Then two pipes, such as are used for lifting warps, are placed on the daggers.

While one man pushes down on his pipe, the other pushes up on his, and in this way the protecting shaft is twisted until both protector daggers are even with each other.

To test the evenness of the daggers, pull the lay forward until both protector daggers are under the frogs. If the tops of both daggers meet the underside of the frogs, on both sides, then the daggers are even. If, however, only one dagger meets and the other dagger is below the frog, further twisting of the protecting shaft is necessary.

It is wise, before twisting the protecting shaft, to examine the feet of the lay end to see if the dagger that is high has assumed this position on account of the foot of the lay slipping upward. This foot is often known to slip up because the protector dagger on that same side has been doing more than its share of work. (*K-184*)

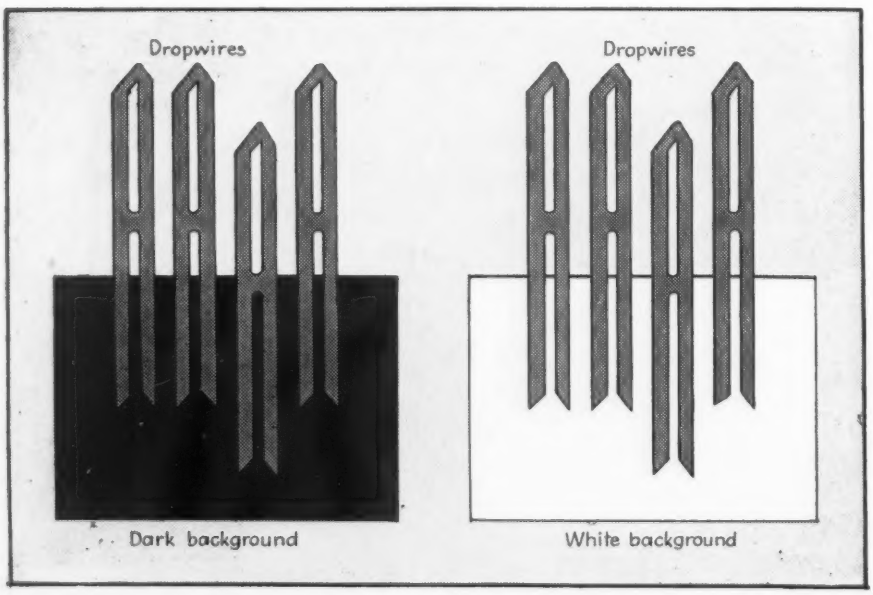
Adjusting Feeler Wires Reduces Filling Kinks

Many loomfixers will shorten the feeler wires of the filling stop-motion in order to prevent kinks from appearing in the cloth. Better results can be obtained by reducing the leverage of the feeler wires on the filling by causing the filling to catch nearer the top of the wires. To accomplish this, we simply push back the shoe of the filling stop motion.

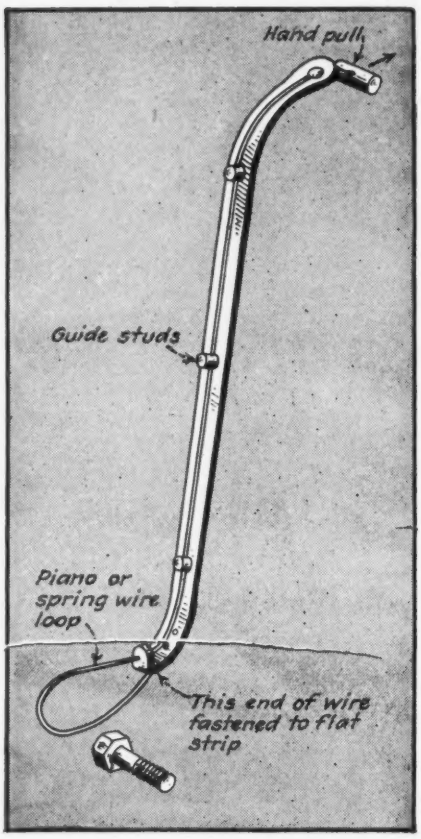
On automatic looms, we must have the feeler wires as long as possible or we get a false stop on the first pick after the transfer. This pick is unthreaded and comes from the top of the shuttle instead of coming through the shuttle eye. The filling is nearer the reed on this pick and the feeler wires of the filling stop-motion will miss catching this pick if they are shortened to prevent kinks at the filling stop-motion. (*K-185*)

White Background Outlines Dropwires

Finding a dropwire that has stopped a loom can be quite difficult, especially if the lighting is poor. To assist weavers to find these dropwires, I tried placing sheets of white paper on the loom frames underneath and at the end of the banks of dropwires. It helped greatly to show up the one that had fallen. Now I merely wash off the end of the loom frame opposite the bottom of the wires and paint a white background. It helps enormously as is demonstrated by the accompanying illustration. (*K-134*)



Sketches demonstrate greater visibility when using white background.



Wire snare helps in recovering small parts from inaccessible places.

Snare for Recovering Parts Hard to Reach

Perhaps there is nothing more annoying than to drop a small article into the mechanism of a machine or into some place that is hard to reach. Sometimes it even is necessary to disassemble a machine to recover a part. However, with a handy tool made, as shown in the accompanying sketch, from a flat piece of metal stock and some piano wire, it is often possible to snare the part and save much time.

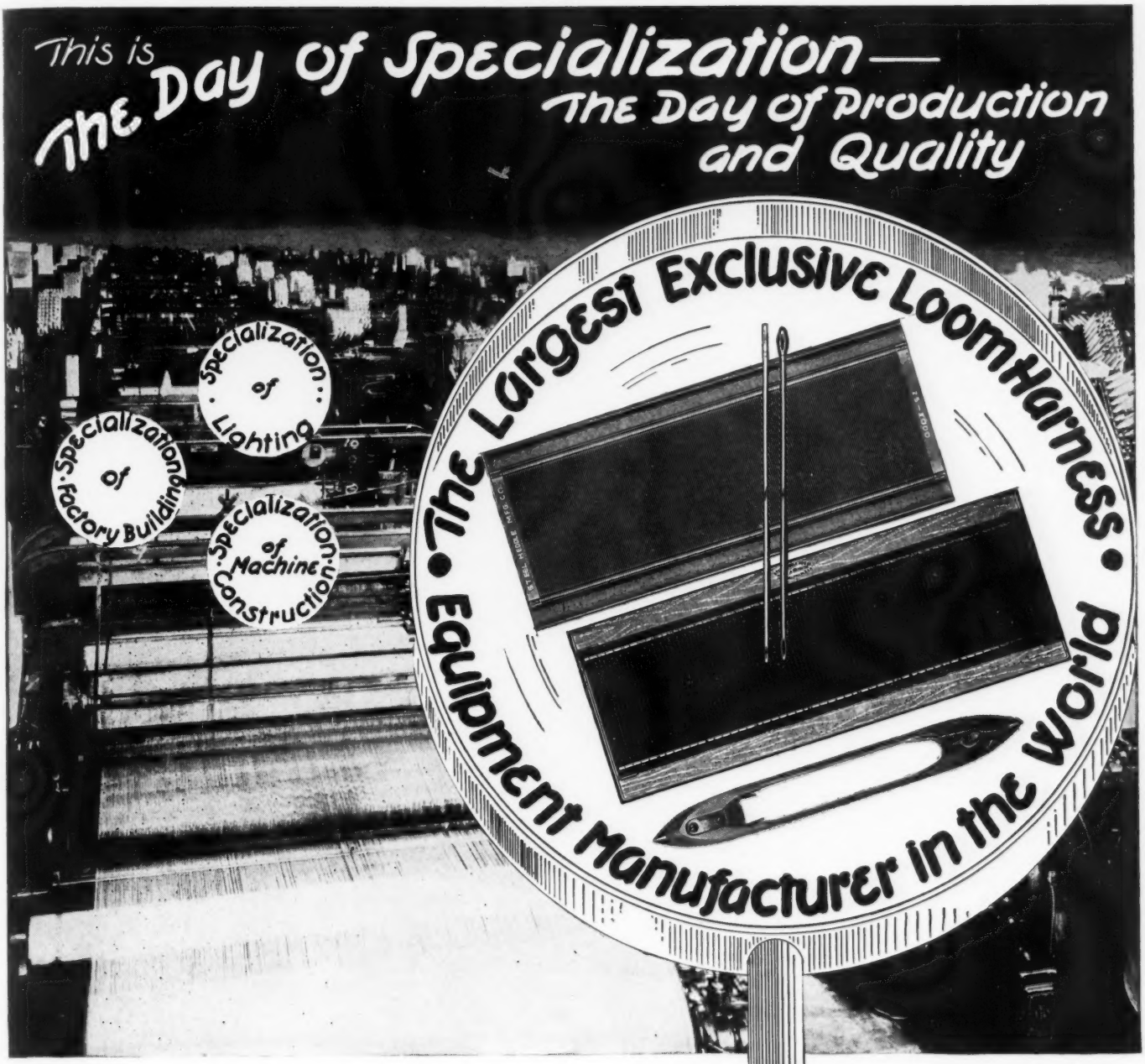
In making the snare, one end of the wire is secured to the bottom of the metal strip. The wire is led up the side through holes in the studs, and then the free end is fastened to a hand grip. (*K-56*)

Rework Picker Sticks To Prolong Their Use

We have a simple, practical idea that will prolong the usefulness of a picker stick at least 50%, based on our results. Practically always, picker sticks wear out at the top—so, when the top of the stick has worn to half its width (or just before it splits), we take off the stick. We cut 2 in. from the top, drill a new hole at the bottom 2 in.

(Continued on page 118)

This is The Day of Specialization— The Day of Production and Quality


Specialization of Lighting
Specialization of Factory Building
Specialization of Machine Construction
The Largest Exclusive Loom Harness Equipment Manufacturer in the World

That is Why You Must Have the Proper Loom Harness Equipment

for each fibre you intend to weave. It stands to reason that the heavier gauge wire, larger designed eye of a cotton heddle won't work out in the weaving of the delicate rayon fibres.

It is not intended for this type of weaving, But.....

There is a definite

Flat Steel
Heddle
Harness
Frame
Dog Wood or Persimmon
Shuttle
Pitchband or All Metal
Reed
for each fibre to be woven.

Here is where our field engineers can be of great help to you.

Their services are free to you.

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BRANCH OFFICES ALL OVER THE WORLD

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FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—TEMPERED DOGWOOD SHUTTLES—LOOM HARNESS ACCESSORIES

FIELD ENGINEERS IN EVERY DISTRICT

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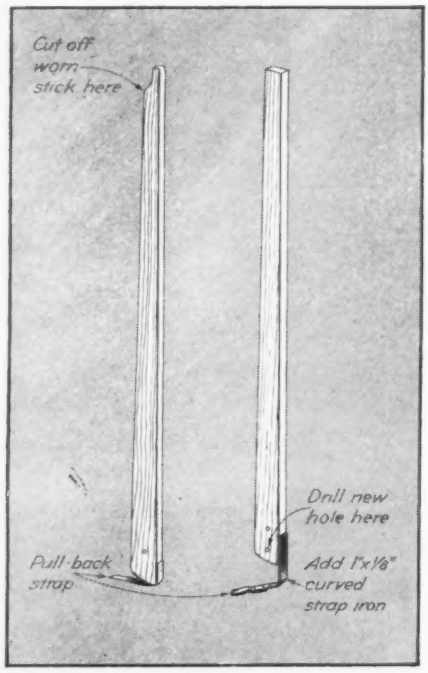
KINKS & SHORT-CUTS

(Continued from page 116)



Life of picker sticks can be increased as shown.

lower, and fasten a "curved flat iron" to the bottom of the stick (as shown in the illustration). This serves as a guide for the bottom pull-back strap. The fixer should have a few of these curved irons on hand to make up assemblies in advance of need. He can even have extra sticks made up.

Picker sticks that have been in use and have become seasoned sometimes last twice as long as normally. (*K-182*)

Traveler Speed on Automatic Spooler

Type C Barber-Colman automatic spooler has a maximum traveler speed of 90 knots per minute. However, some mills do not need all this speed and the timer must be used to stop and hold the traveler at the end of its cycle until the bobbins have run out. If all this speed is not needed and the traveler is wasting part of its time on a "dwell", the speed of the traveler can be adjusted so that the dwell can be eliminated. This is, I think, a desirable practice as it cuts out hundreds of stops per day causing less wear on the clutch, and it eliminates lost time due to "timing" the traveler after every manual start. (Of course, this particular evil can be avoided by cutting a slot in the stop bar.) The traveler operates better at reduced speed. There is no point in the traveler rushing around at 90 knots per minute only to "sit down" at the end and wait, when it could make the same round at 72 knots per minute and keep going without a dwell.

In our case, the traveler was tying 86 knots per minute. It completed its round in 3.39 minutes and dwelled .66 minutes, making a total time per round of 4.05 minutes. We could not run a faster round than 4.05 minutes because of the yardage on our 31s yarn. By slowing down to 72 knots per minute, the traveler completed its round in exactly 4.05 minutes, hence no dwell was necessary, so the timer was locked on "O" and forgotten. (Incidentally a lot of section men claim that a timer can't be put on "O" and that the only way to make the timer leave the traveler alone is to put a block of wood under the lock arm. But it can be locked on "O" by turning the dial to the right hard and holding it there while the lock pin is released. On such a setting, the timer does not affect the traveler at all.)

If the time of the dwell was very long, of course it would be impossible to slow down enough to eliminate it. But if the dwell can be done away with by cutting 10 or 20 knots per minute off the traveler speed it is well worth the effort.

The changing is done by having the shop turn down the traveler drive pulley to the desired diameter. This can be easily calculated. If at a later date more speed is needed the pulley can be built up to any desired diameter. (*K-139*)

Resetting of Harness Helps End-and-End Cloth

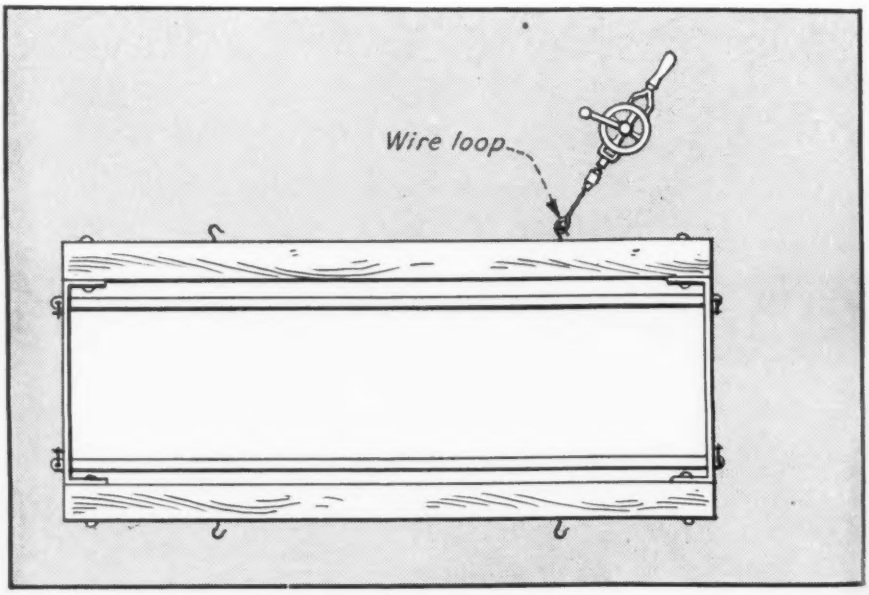
Several months ago we were weaving a rather difficult basket weave. The warp was composed of 2/30s cotton and singles woolen yarn about 2½ run. It was on eight-harness, straight draw, and consisted of one thread of cotton and one thread of wool alternately. The two-and-two basket weave resulted in having one cotton thread and one woolen thread always in the same sphere.

Naturally, this produced a great amount of fiber stealing and rolling. The cloth should have been redesigned from a straight draw to cross draw, but it was too late when found. Rather than take out the warp and redraw, we set the harness stirrups low on all harness carrying woolen threads, and those that controlled the cotton were set high. This prevented stealing and rolling and the fabric was woven successfully. (*K-187*)

Tool for Removing Harness Hooks Rapidly

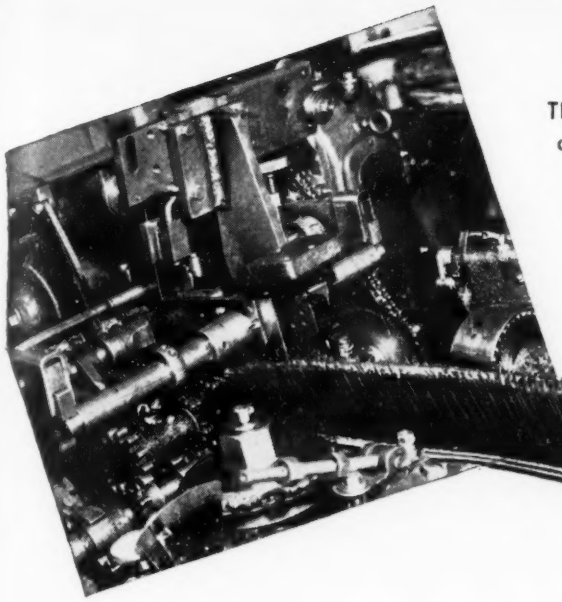
Much time can be saved in removing harness hooks from frames by using the small tool shown in the diagram. The tool consists of a small loop made of stiff wire formed with a shank that can be inserted in the chuck of a hand drill.

To operate tool, hook the loop into a harness hoop and turn the drill handle in the direction needed. Instead of bending a wire you can use a harness hook in the hand drill chuck. A large hand drill is preferable. (*K-133*)



Simple wire bit saves time in removing harness hooks.

FULLERGRIPT BRUSH STRIPS
are made on a machine like this..



The brush material is centered over a ribbon of heavy-gauge metal and held in place by an anchoring wire and roll-formed into the finished shape as illustrated ①. Thus, as the bristles are doubled under the anchoring wire (hairpin style) and encased in metal under great pressure, permanency is assured.

FULLERGRIPT has a solid, continuous fill of material with no gaps or spaces between the bristles, resulting in much longer life and far better cleaning.

COTTON MILLS *can re-brush their* **FLAT CARDS** *with* **FULLERGRIPT BRUSH STRIPS** - which are shipped pre-formed to the correct degree of spiral (right or left hand). Your own maintenance men can easily mount them to the old brush roll.

Over 6000 Cotton Cards are equipped with our brush sets and are doing a better job of cleaning card clothing.

This is how your maintenance men renew your worn-out card brushes with FULLERGRIPT STRIPS Put worn card brush roll in lathe centers. Trim off old tufts of bristles with a sharp knife. ② Sand-paper the roll. Apply two coats of black shellac. Drill screw holes on 8″ centers and fasten the spiralled Fullergript Brush Strips with the special screws furnished with each set of strips.

EVERY WEEK some *COTTON MILL* in the United States installs one or more sets of *FULLER FLAT CARD BRUSH STRIPS*

Manville Jencks, Manville, R. I.

THE FULLER BRUSH COMPANY
INDUSTRIAL DIVISION, DEPT. 8C, 3594 MAIN ST., HARTFORD 2, CONN.

THIS IS NO. 46 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

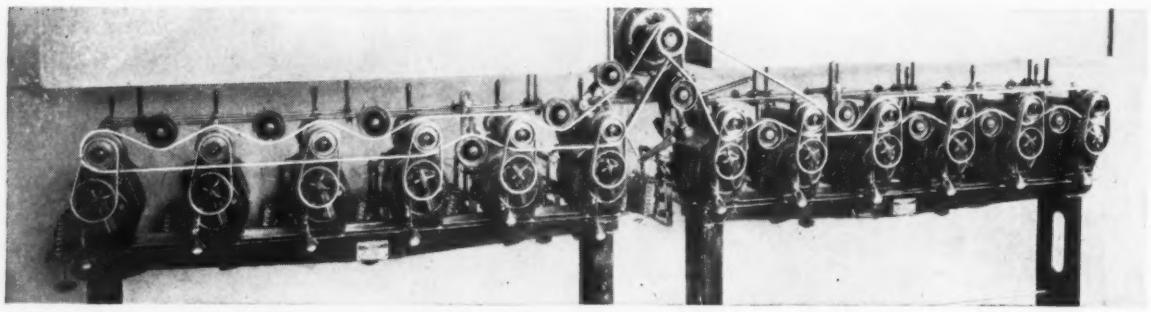


Fig. 1 Clutch Drive with Serpentine Belt—One Belt for Each Gang of Six Spindles.

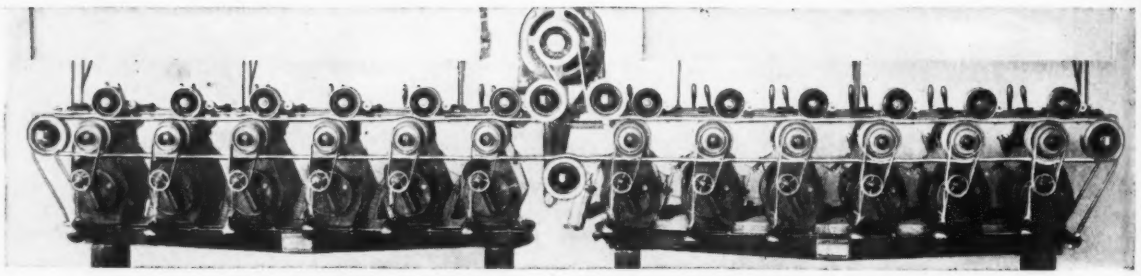


Fig. 2 Straight-Belt Drive, Belt Gain—One Belt for Twelve Spindles.

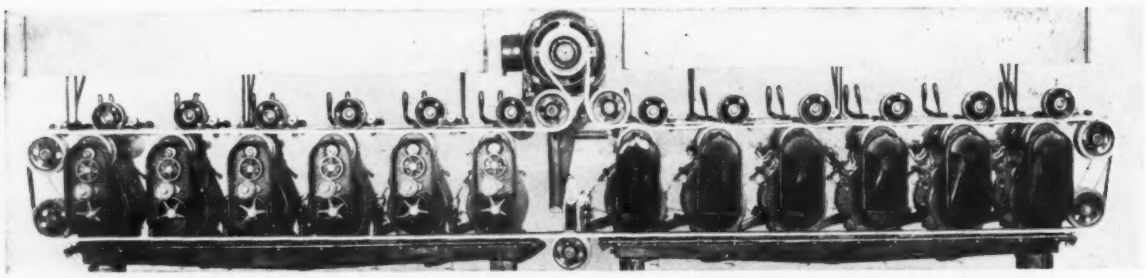


Fig. 3 Straight-Belt Drive, Gear Gain—One Belt for Twelve Spindles.

STRAIGHT-BELT DRIVE (No. 50 Winding Machine)

No. 50 Winding Machines installed during recent years have been equipped with Straight Belt (L Type) Drive; many installed earlier have been changed over to Straight-Belt Drive. Any machine now using the older clutch-type drive can be changed to Straight-Belt Drive with very little difficulty.

As the name implies, the belt runs in a straight line, in contrast with the serpentine belt line of the clutch-type drive. There is no clutch; the winding spindle is driven directly by a pulley which is actuated by the belt being thrust directly on to it by an Idler Pulley above the belt.

All 12 spindles are driven by one continuous belt, whereas in the clutch-drive machine, there is a separate belt for each gang of six spindles.

There are many advantages to the Straight Belt Drive which is designed for the purpose of having the machine operate at high efficiency and eliminating the difficulties experienced with the clutch drive.

Belt life is longer. When any spindle stops, the Idler Pulley is immediately lifted, permitting the belt to move up out of contact with the Driving Pulley, which is not the case with the clutch drive. Thus wear on the belt is reduced. We have reports from mills that belts have been in operation for 3½ years and are still performing satisfactorily.

Maintenance costs are less. With clutches, clutch levers and bushings eliminated, time and labor costs for mechanical adjustments and settings and the costs of repair parts are saved.

End breakage is reduced. The spindle starts very slowly, because there is no "grab" as with a clutch.

Downtime for repairs is reduced. An individual spindle may be stopped without interfering with the production of other spindles. This is not the case with the clutch drive, where it is necessary to stop the entire gang of six spindles when repairing driving parts of a single spindle.

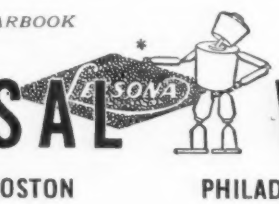
Wear on end spindles is eliminated. The extra End Idler Pulleys take the strain which on a clutch-type machine is imposed on the end spindles.

Less power is needed. A ¾ HP motor will easily drive 12 spindles.

Experience has proved that an installation of Straight-Belt Drives very soon pays for itself. Many mills have made the change over an extended period; for instance, an initial installation of Straight-Belt Drives will release clutch-drive parts which can be used for replacing worn parts on other clutch-drive machines, thereby saving the cost of ordering new repair parts. Eventually, all of the No. 50 machines can be changed over to the more satisfactory type of drive for approximately the cost of the repairs which would be needed to keep the clutch-drive machines in operation.

See our Catalog in TEXTILE YEARBOOK
23.4.1

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"



UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U. S. Pat. Off.

Pete & Bill

KEEPING KEY WORKERS

Should machine fixers and other key men be persuaded to stay on their job even when they have a strong urge to get into the armed forces?

BILL, IN SPITE OF AN OCCUPATIONAL DEFERMENT BOB STILL WORRIES ABOUT WHETHER HE SHOULD JOIN ONE OF THE SERVICES OR NOT.
HE'D BETTER LET WELL ENOUGH ALONE PETE. HE'S DOING A LOT TO HELP THE WAR EFFORT AS A FIXER. HIS CONTRIBUTION AS A SOLDIER WOULD BE SMALL COMPARED WITH THAT.
1
THAT'S WHAT I TELL HIM BILL. IT TAKES YEARS TO TRAIN A FIXER, AND LESS SKILLED MEN SHOULD GO BEFORE BOB. HE'S AFRAID HIS SOLDIER FRIENDS MIGHT DISAPPROVE OF HIS STAYING HOME.
WELL, IT IS HARD TO GET A PATRIOTIC MAN TO STAY ON THE JOB WHEN HIS BUDDIES ARE IN UNIFORM. I GUESS THE ONLY THING TO DO IN SUCH A CASE IS TO LET HIM GO AHEAD AND JOIN UP.
2
I DON'T AGREE WITH THAT BILL. IT'S MY DEPARTMENT THAT WON'T RUN SO WELL WITHOUT HIM AND I DO HONESTLY BELIEVE THAT HE IS DOING MORE FOR THE WAR EFFORT BY KEEPING PRODUCTION MOVING ON MILITARY FAB- RICS.
HERE'S JOE. PERHAPS HE CAN SETTLE THIS MATTER AND TELL HOW YOU OUGHT TO DEAL WITH BOB. I'LL HAVE TO ADMIT I DON'T KNOW HOW. I GUESS BOB WILL HAVE TO DECIDE THIS HIM-
3
FELLOWS, PLEASE DON'T PASS THE BUCK TO ME ON THAT PROBLEM. I'M SURE OUR READERS HAVE SOME GOOD IDEAS ON THIS ONE. LET'S HAVE THEM FOLKS!
4

LETTERS TO PETE & BILL are paid for when published, without regard to length. We use letters (not over 200 words) discussing material in this department or any other pertinent matter. Contributions of greater than specified length may be given consideration as articles. Suggestions for the Pete & Bill dialogue are also welcome and if used will be paid for. If these pages interest you, contribute something to them to interest others. Address PETE & BILL, Textile World, 330 West 42nd Street, New York 18, N. Y.

Letters From Readers

Opposes "Red-Tape" Methods for Promotion

"Rating Employees"
(Pete & Bill, May, 1944)

Dear Pete & Bill.

No, I would insist that employee-rating systems are not always serviceable to overseers in selecting workers for promotion.

Once, or occasionally, such rules might work satisfactorily. At other times the method would prove altogether wrong and perhaps destructive to high production.

Let us take it for granted that most rules and regulations, though seemingly fair and important, do not always prove successful in any line of business, especially in textile work.

If an employees' merit is thoroughly known, he should get a promotion without "red tape". (*PB-162*)

Comment from England

"Technical Meetings in Wartime"
(Pete & Bill, Feb., 1944)

Dear Pete & Bill.

I wonder if you are thinking tonight of your old friend on fire-guard duty in a mill in war-torn England. I don't think Hitler likes me, for whenever it is my night on fireguard he throws things around which are neither candies or bouquets. He has made flying visits to my home, not leaving it in the same state of repair as he found it.

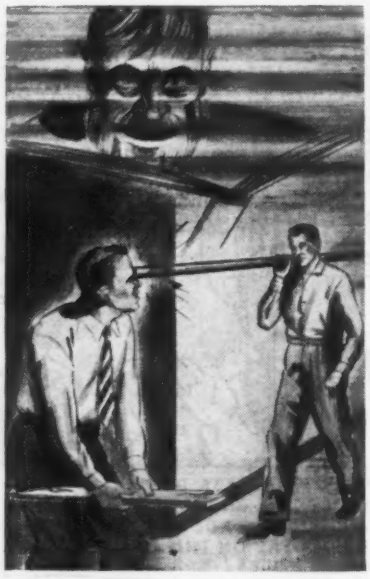
Well, buddies, I have been asked if I will go to Blankton for some technical meetings, and it has set me thinking of the old days when we would go from Paterson to Connecticut, a grand trip on a luxurious boat.

We learned a lot on those visits for there is nothing like seeing how other people do things. Twice I have had jobs where I could run things just as I liked, and then afterward I have found that I had slipped by not keeping abreast of modern methods. Yes, we learned much, but, after all, didn't we really go because we liked the trip? Do you remember when we were at Wilkes-Barre, we asked the new manager how he liked "the Valley," and his freezing reply? "Like! Why a man has no right to consider what he likes until he is 60!" Yes! Doesn't it do us good, to have to do something we do not like?

Well, I have had to experience many things I do not like in four and a half years of war. There are many who came voluntarily into this mill, but there are many girls and middle-aged women who came because they were compelled by the government to go on to war work. However, they soon settled down to it when they saw the grandfathers and grandmothers come in voluntarily.

When the blitz was at its worst, the

MEMORIES OF OLD MAN CARELESSNESS—*By Martha Pittenger*



No. 19
Stars and Shiners

How can a man celebrate his independence when he is in the hospital on the Fourth of July? Yep, there is just where this man was, suffering from a hemorrhage of the nose and a dangerous clot in the sinus.

How did the accident happen? It didn't just happen! I had induced two men, who were carrying a long steel shaft, to go through the mill without a guide. The fellow who got the injury was leaning over picking up something from the floor. As he raised up, bang went the shaft right between his eyes. Stars and shiners for him—but outside Stars and Stripes for Uncle Sam.

It is well for all employees to remember to have a guide go before them, when they are carrying a cumbersome and hazardous object, regardless of the distance they may be taking it. The noise of the machinery and his preoccupation with work, keeps an employee from being aware of the approaching danger.

My usual hiding place is on the stairways, around corners, and at cross-alleys. These places call for a guide, when someone is carrying, or pushing a destructive object. Do not forget that I am ALWAYS on my job trying to keep you off of yours.

raids would last from dusk till dawn, and the workers would go home under gun fire and return in the morning an hour ahead of scheduled time, with the roar of battle still going on, in order to do their bit.

Needless to say, we did not go on technical trips in those days. Although now we do not average two raids per week, I am inclined to think that if I leave the mill and go on a trip, I am not resting my nerves as I should. *(PB-163)*—From a former American mill man, now in the English textile industry.

Rating System Gives Worker Confidence

"Rating Employees"
(Pete & Bill, May, 1944)

Dear Pete & Bill.

There is no doubt that any firm will benefit by use of the proper employee-rating system. Where it is used, both in the textile industry and in other industries, its advantages far outweigh the comparatively slight inconvenience and expense of keeping such records.

It is obvious that in any large plant it is almost impossible to upgrade employees fairly and uniformly by relying solely upon the memory of the overseer no matter how conscientious he may be. The use of a rating system will be a distinct advantage to the overseer in his working relationship with his employees, since there can then be no basis for charges of favoritism or discrimination. On the other hand, the employee will know that his promotion depends upon his improved performance, and he will strive to do his best on the job. Rating an employee on a routine job will give him a sense of satisfaction he hardly feels without this measure of performance.

Use of the point system, or any other suitable system, will enable the employer to fit the employee to the particular job for which he is best suited by taking into consideration the best use of his skills, his temperament, and any other particular characteristics he may have. Reduction of avoidable absenteeism and turnover, harmonious relationships within the plant, and greater productive efficiency are the most apparent rewards of an employee-rating system. *(PB-161)*

A Vote for Common Sense

"Rating Employees"
(Pete & Bill, May, 1944)

Dear Pete & Bill.

I agree with you both as you start your talk rating employees; records are sometimes useful but involve a lot of work. I feel that Bill is right in believing that overseers should be able to pick out the workers worthy of development without too much red tape—promote those you can depend upon. It is equally right not to let your judgment depend on personal feelings. I have had the pleasure of having the boss ask me if so-and-so is fit for a better job, and I've been glad at such times to be able to be of service to the management. *(PB-164)*

Start the New Hand Carefully

"Starting the New Worker"
(Pete & Bill, April, 1944)

Dear Pete & Bill.

I'm sticking with Pete on the question of starting the new worker. My experience has been that the first 30 minutes in instructing new hands is more important than several hours later. Tell them at the start all about the goods they are making, what they are used for, and how many pounds we need each week. Let them know too that you are working for a living and your job depends upon their help and cooperation; also let them know that they can come to you any time with their problems. *(PB-160)*

Would Cancel Meetings for Duration

"Technical Meetings in Wartime"
(Pete & Bill, Feb., 1944)

Dear Pete & Bill:

Personally I must insist, like Bill, that it would be good judgment to cancel technical meetings for the duration. I would encourage technical get-togethers any other time except in these crucial days of grim warfare. *(PB-133)*

LESS STRAIN ON FRAMES . . . NO STAIN ON WORK

SUN LUBRICANTS

Adheres to Cams and Gears . . . Cuts Spoilage and Waste

Improper lubrication in a textile mill can be extremely costly . . . not only in wear and tear on machinery but also in grease-stained work. In a Pennsylvania mill, seven different greases, all well-known brands, were tried on spinning frame gears and cams.

Lubricants did not cling to the surfaces but dripped upon the floor, or were "splattered" upon the work, causing considerable damage to material and excessive consumption of grease.

A Sun Adhesive Grease was tried at the recommendation of a Sun Engineer. The adhesive characteristics of this lubricant kept it on the gears and cams and kept it *off* the work.

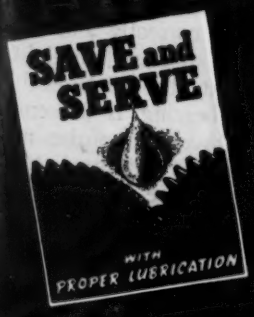
Less lubricant is used because it does not drop off. Maintenance has been cut down because frequent regreasing is no longer necessary. Frames run more quietly than ever before. Wear and tear on the machines have been greatly reduced through more efficient lubrication.

Many of the leading textile mills in the country have overcome difficult lubrication problems by calling upon the services of a Sun Lubrication Engineer. His broad experience, plus the complete line of Sun Industrial Lubricants, may prove to be the answer to some particularly tough lubrication job in your plant. A letter or a telephone call will bring him promptly.

Have you obtained a copy of this new Lubrication Manual? Prepared by Sun Engineers, it provides authoritative information on "How to Get the Most Out of Lubricants." A free copy will be sent to you upon request.

SUN OIL COMPANY • Philadelphia 3, Pa.

Sponsors of the Sunoco News Voice of the Air—Lowell Thomas



SUN INDUSTRIAL PRODUCTS

HELPING INDUSTRY HELP AMERICA

Loomfixers' MANUAL

RAYON AND SILK SECTION—Chapter IX (Cont.)

TAKE-UP MOTION By H. E. Wenrich

HEAVY OR LIGHT PICKAGE may also be traced to faulty take-up gears and pinions, mechanism parts, and to poor fixing. The take-up stand is secured to the breast beam on each side of the loom by means of wood screws or bolts. When wood screws become loose or broken, a fixer can improve such looms by drilling through the stand and breast beam and replacing the screws with ¼- or ⅜-in. top-stand bolts.

It has been found that when weaving rayons, the breast-beam roller, top take-up roll, and spreader roller can be, and should be fastened in a stationary position. Holes are drilled in the roller ends for U-bolts, screws, or pins to be placed so as to prevent the turning of these rollers. But, felt-covered pressure rollers (some looms have two), take-up drums, and bottom cloth-rollers must be left free to turn.

The pressure rollers are tensioned against the take-up drum by means of short hold-down springs which are kept in place and adjusted by a pressure stand-screw. When the pressure roller looses its efficiency and allows the cloth to slip back, it will be found that the hold-down springs are weak and need replacement. The springs must yield enough to allow the cloth to feed under the roller in an even manner. Should one side of the pressure roller allow slippage and the other side maintain correct tension, the cloth will slip back under the roller every time the weaver picks out defects, or when the loom bangs off. This action creates tight marks on the half of the loom where slippage is prevalent. When such trouble occurs, inspect the drum covering and the pressure roller covering. It may be that each needs replacement. And again, the action may be caused by a weak hold-down spring that needs replacing. Also, slippage may be due to waste yarn wound around the pressure roller, preventing proper pressure of the cloth against the take-up drum, or by waste yarn collected in lumps under and around the springs so as to prevent proper hold-down pressure. Such waste yarn should be removed as soon as possible. Floor-hands that are tying-in warps should remove all pressure rollers on every loom, remove all waste, and remount. At the same time pressure rollers should be recovered, if needed.

FOR NEW FELT COVERINGS. Pressure rollers should be removed from the loom and taken to a designated spot when adding new felt coverings. The covering best suited for rayons and silks is a heavy felt about 4 in. wide. Use glue, shellac, or carton glue as an adhesive. Carton glue is an ideal substance for this purpose. Use a small paint brush for applying. It will last as long as the felt and costs but a trifle compared to other glues or shellac. Its quick-drying feature allows instant replacement of the roll on the loom. When covering pressure-rollers, place the roller so that the felt spiral will run opposite to the take-up drum-covering spiral.

Weavers are allowed little time for painstaking care in cloth cleanliness under the present system whereby a weaver runs from 10 to 24 looms. Loose ravelings are neglected and have a habit of winding down around the take-up gears, much to the detriment of the action of such gears. This waste yarn gathers around the top take-up gear, intermediate pinion and gear, pickwheel pinion, and the cloth roller. When weavers clean their looms over the week-end, such waste should be removed. Keeping take-up gears free from yarn will prevent many a burnt bearing which results in tight marks in the woven cloth.

Waste prevents oil from feeding into bearing surfaces and also draws out any oil that may be inside the bearing. This action is especially true of take-up drum shaft bearings and intermediate-gear stud bearings. In time, if waste does not cause the bearing surfaces to freeze fast, the shafting and stud surfaces will become so worn as to cause barre in the woven cloth. This defect applies particularly to drum take-up bearing surfaces. When trouble is encountered with the take-up, a good method of testing for the actual location of wear on parts is to place the lay on front center so that the reed rests against the woven cloth. Then throw the brake handle to the "off" position. Working the pick-wheel back and forth will disclose at which place loose motion exists. Such parts showing undue wear should be removed for repair or replacement.

TAKE-UP DRUM SHAFTS. As it is impractical to replace take-up drum shafts when slightly worn, the next best method is to repair bearing caps. Caps can be removed and filed down so as to make a perfect fit. But again, other trouble appears when eliminating certain defects. When repaired caps are replaced in position, the take-up drum is forced forward into the solid section of the take-up stand and throws the drum gear out of alignment with the spur pinion and intermediate gear. Very few fixers realize that this action is the direct cause of damaged or broken teeth on take-up gears. It is obvious that, in repairing bearing caps, the intermediate gear studs must be aligned with the repaired job so the spur pinion and intermediate gear is positioned in proper alignment. Likewise, it may also be necessary to re-align the pickwheel bearing so the spur pinion on the pickwheel shaft is properly positioned. This can be taken care of by shimming one side of the improper positioned studs or bearings. When new gears are to be replaced on looms, best quality steel cut-gears should be obtained for replacements.

In meshing take-up gears, the intermediate gear stud is loosened a trifle and tapped upward so that the spur pinion will mesh into the take-up drum top gear correctly and without binding. The stud is then tightened securely. Next, the pickwheel stud and/or stud bearing is loosened so that the pickwheel spur-pinion meshes correctly with the intermediate gear. When working the pickwheel back and forth, excess play should have been eliminated.

Two views of the card room at Cleveland Worsted Mills, showing the Proctor Metallic Worsted cards in operation.

CLEVELAND WORSTED MILLS SHOW PRODUCTION GAINS AT NEW LOW COST

Some time ago the Cleveland Worsted Mills replaced 66 old cards with 10 entirely new Proctor Metallic Worsted Cards and 7 cards reclothed with Proctor Metallic wire. A survey conducted in their plant, by Barnes Textile Associates, Inc., of Boston, Mass., revealed the following amazing facts. The new cards operate in slightly more than ¼ of the floor space formerly required. The 17 metallic cards have increased production 185.6% per card. The average production per card hour is now 92.67 lbs. as against 32.54 lbs. with the old cards. With this vastly increased production, the quality of the card sliver has actually improved. The survey further revealed more than 40% saving in labor and a saving of 51.3% in power consumption. As astonishing as these figures sound they are only typical of the production possible with the Proctor Metallic Worsted Card. The full story of the findings of this survey is told in booklet form and is available to anyone contemplating revamping or installing a card room. Write today for details.

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FOR EXCHANGE OF IDEAS

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Suggested System May Reduce Fires

In line with our study of preventable losses in the cotton industry, we would like to present our compliments to Raymond W. Mitchem for his fine article in the March issue of TEXTILE WORLD under the title "Eliminate Waste in Cotton Sampling and Marketing." The popular method of taking samples from the outside of the bales does not give as representative a sample of the staple as by taking the sample at the gin while the bale is being made up. This practice creates a distinct fire hazard by exposing much loose cotton on the surface of the bale as well as on the warehouse floor.

In order to compensate for this inaccurate sampling, the tendency is to lay down a larger number of bales in the opener room than would otherwise be necessary, thus creating an additional hazard, especially if conditions in the opener room are crowded. This mutilation of the cotton bale has a

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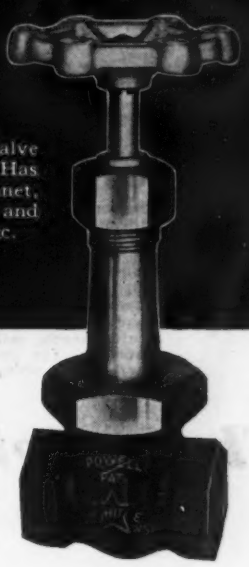
Fig. 375—Bronze Gate Valve for 200 pounds W. P. Has screwed ends, union bonnet, inside screw rising stem and a special hard bronze disc.



Guessing and gazing are out when it comes to buying your flow control equipment. Because, for even the simplest operation, the valve must be of correct design to obtain maximum efficiency. This not only includes basic type, such as Globe, Angle, Gate, "Y", Check, Relief and Non-Return, but such factors as suitable stem action, bonnet construction, working pressure and especially the materials used in the body and mountings. Thus, for certain services, an all iron valve is not only entirely adequate but most economical. But in many cases bronze, steel, pure metals or even special alloys are indicated. POWELL *makes them all*. And to assist you in selecting the correct valves to meet your individual requirements, POWELL maintains a staff of engineering experts who are always at your service for consultation and advice.

Fig. 500—Bronze Gate Valve for 125 pounds W. P. Has screwed ends, screwed-in bonnet and inside screw rising stem. Sizes ¾" and smaller are equipped with taper wedge solid disc; sizes 1" and larger, with taper wedge double disc.

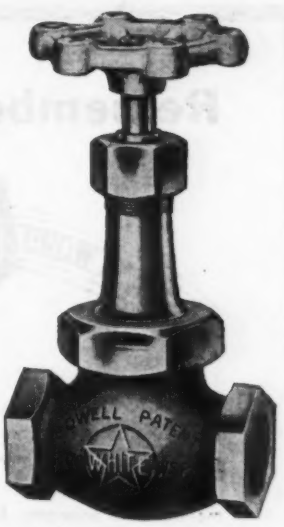


Fig. 1708—Bronze Globe Valve for 200 pounds W. P. Has screwed ends, union bonnet, renewable seat and regrindable, renewable hard bronze semi-cone plug type disc. This valve is especially suitable for throttling service.

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ACID WATER

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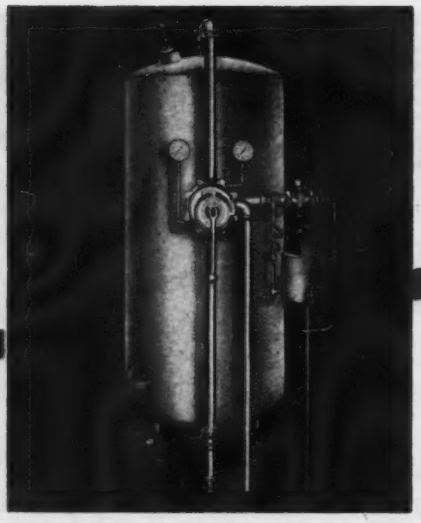

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considerable influence on the spread of fire and size of losses, both to the cotton as well as to the building and equipment. Total losses are sizable.

It is more difficult to safeguard adequately these mutilated bales by automatic sprinkler systems, especially where high piling is practiced, and burrowing fires are invited in every spot where sampling has been made. Such bales are more susceptible to sparks, and we would expect a higher number of fires to start.

Mr. Mitchem's suggestions seem so well founded and so fundamentally sound that we wonder why there continues to be such obviously wasteful methods in a major industry. *(R-70)*. R. G. Shepherd, Engineer, Associated Factory Mutual Fire Insurance Co., Boston, Mass.

Seeks Information on Protector Rods

In our mill we are operating some looms equipped with protector shafts constructed with a collar dividing the shaft into two parts, while other looms in the mill are equipped with the protector shaft in one piece. I question as to which type is best.

We find the protector rod which is in two pieces can be adjusted much more quickly, but the protector shaft which is all in one piece is more permanent.

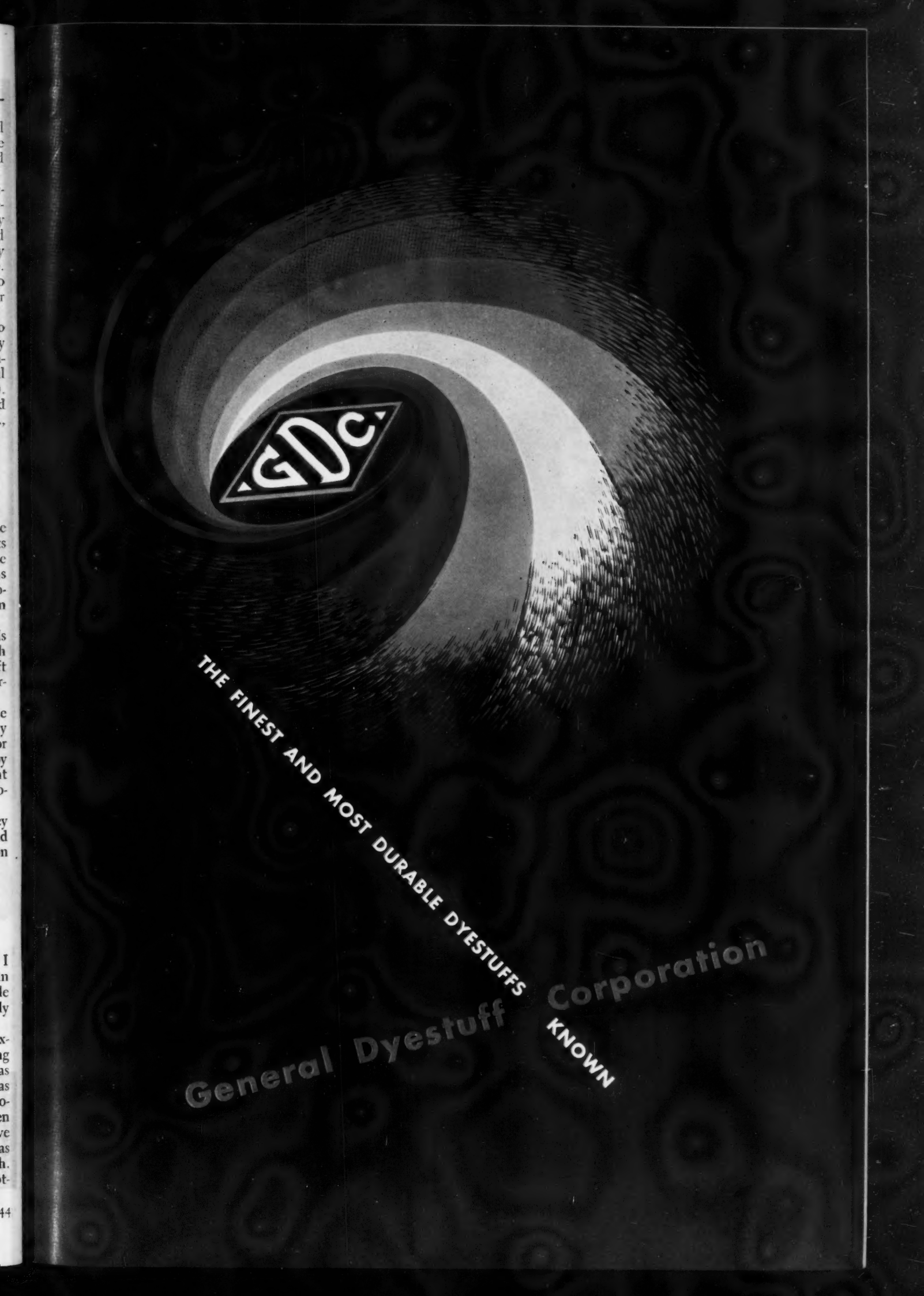
The speed of the loom has some bearing on the case, and what may suit a slow loom will not be right for a fast loom. What we may gain by being able to adjust quickly, we might lose by our adjustment not being absolutely permanent.

I am inclined to favor permanency over speed of adjustment but would like to see some Round Table opinion expressed on this matter. *(R-74)*.

Notes on Exposition Of 1895 in Atlanta

It was with unusual interest that I read the article by Frank L. Nagle in the January, 1944, edition of Textile World, under the heading "Early Southern Industry."

His attendance at the Atlanta Exposition in the fall of 1895, along with many of his Eastern friends, was of peculiar interest to me, since it was my pleasure also to attend the Exposition, where the company I then represented had quite an extensive display of textile machinery. This, as in his case, was my first trip South. That Exposition, known as the Cot-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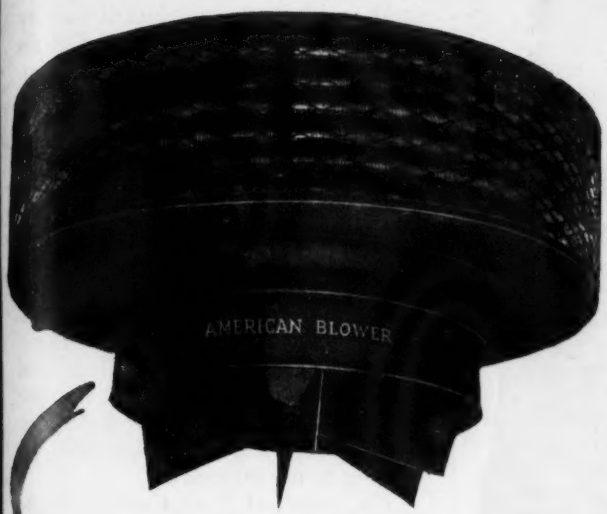
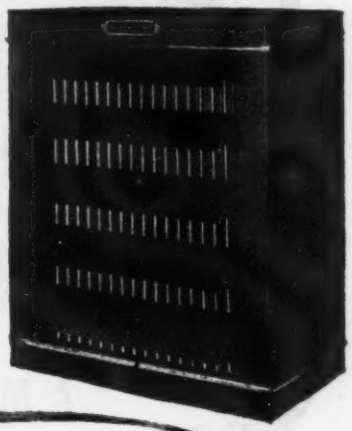


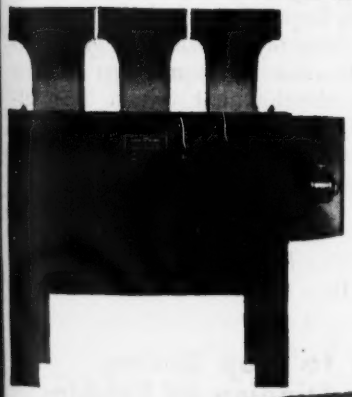
The Vertical Type

American Blower Vertical Unit Heaters for systems requiring ceiling mounted units have capacities of 144,000 B.T.U. and larger. A proved, practical method of heating large, high ceilinged industrial plants where heated air must be forced over wide areas.



The Horizontal Type

American Blower Venturafin Unit Heaters for wall or ceiling mounting. Built in sizes of 24,000 B.T.U. and larger. Ideal heating units for factories, plant offices, garages, warehouses, etc. Highly efficient and effective. Units force heated air over wide areas at desired levels.



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ton States International Exposition was held in Piedmont Park, according to advices I have received on the subject. In the write-up, Captain Nagle spoke of this 1895 Exposition site being later occupied by Exposition Cotton Mills; and that has led me to make an investigation, since it was my impression that Exposition Cotton Mills antidate the 1895 Exposition. This impression is now born out by a letter of March 29, 1944, from the Atlanta Historical Society.

Davison's Blue Book lists the Exposition Cotton Mills as having been incorporated in 1882, some years before the 1895 Exposition. As I have always understood, and as now confirmed by the Atlanta Historical Society, Atlanta held two expositions, the first in 1881, the buildings and grounds having been bought by the Exposition Cotton Mills. Later, in 1887, another exposition was held, according to my informer.

The names of those Captain Nagle lists as having accompanied him to the 1895 Exposition are now quite familiar to me, though at the time it was not my pleasure to know them.

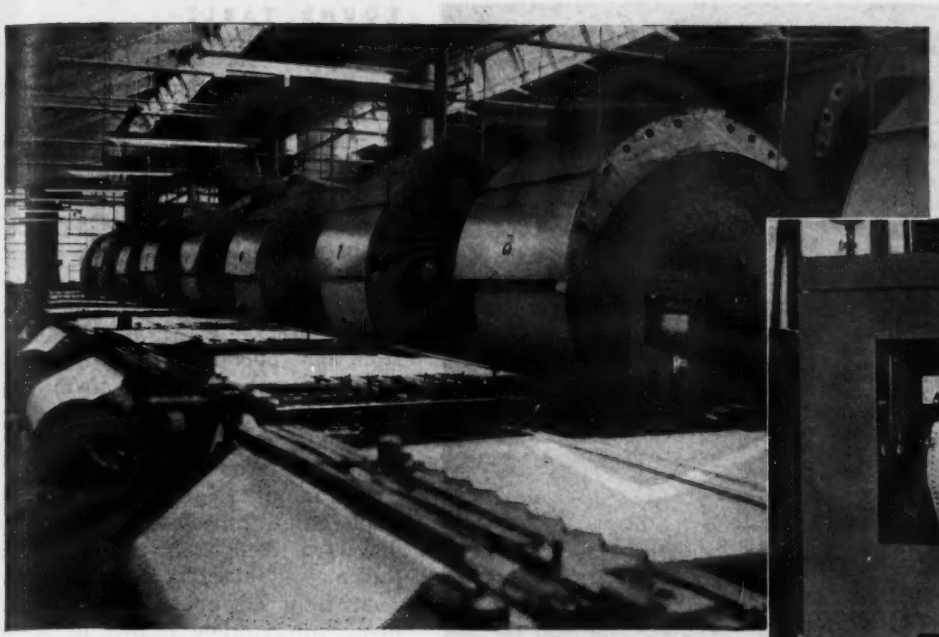
Later, in 1902, when I moved to Charlotte to open the sales office of Mason Machine Works, I came to know many of them. Over the years since then, there has been much water to pass over the dam; and Captain Nagle and I have lived to see the marvelous development in the textile industry in this Southern area since the Atlanta Exposition was held in 1895. It has been my pleasure and good fortune to have had some part in this textile development which has afforded many pleasant contacts and acquaintances.

I shall retain the article as an interesting review of the trip Captain Nagle and his friends made to Atlanta. *(R-61)* Edwin Howard, Veeder-Root, Inc., Greenville, S. C.

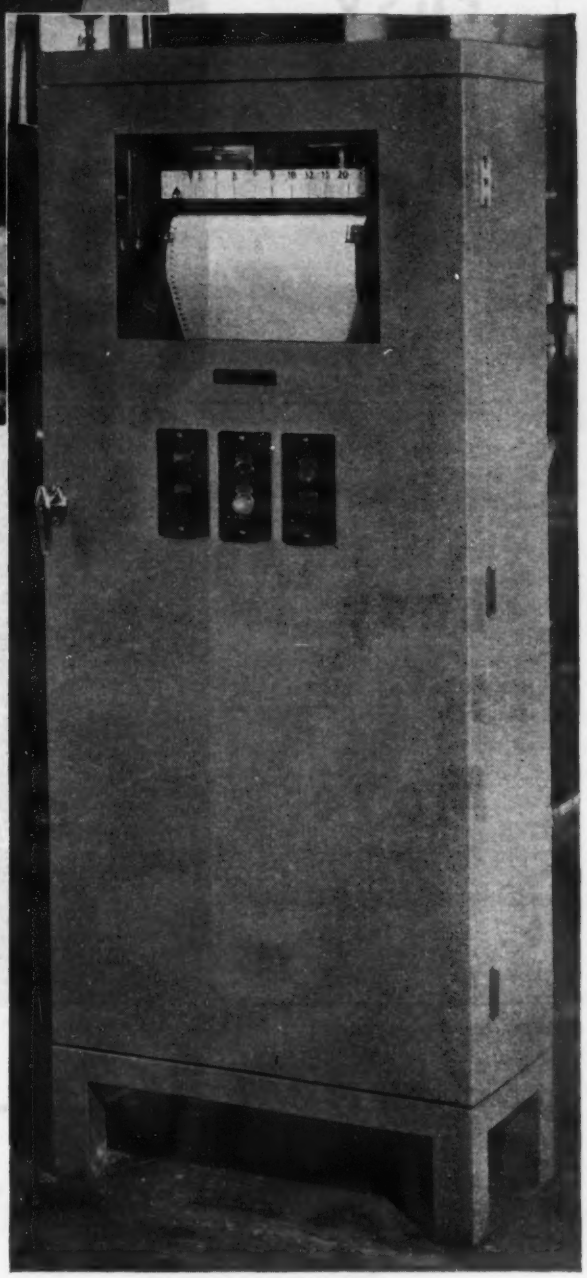
How to Stop Roving from Slipping on Bobbins

The generality of this question necessitates considerable guess-work. We visualize two conditions of slippage. One occurring in the initial layers next to the wooden bobbin and the other a sloughing or slippage of the layers in the mass of roving wound on the filled bobbin. We believe the first to represent the unsatisfactory condition.

If the slipping is occurring in those layers nearest the wooden bobbin, our first suggestion would be to determine on the fly-frames if the slippage was



Slashers at West Point Mfg. Company, West Point, Ga., are controlled by The Brown Moist-o-graph System.



INCREASED SLASHER PRODUCTION

Regain in warps and fabrics can now be measured, recorded and controlled to maintain slasher production at highest yardage per minute that slasher drying capacity can produce, for any particular weight of set.

The Brown MOIST-o-GRAPH Slasher Speed Control System makes this possible by providing important data on moisture content in yarn or cloth in the form of permanent, charted records.

The Brown MOIST-o-GRAPH measures regain with an accuracy which numerous installations have shown to be far above that obtained in routine laboratory tests, and records it on a 12" chart with a range spread of 4 to 12% regain.

The MOIST-o-GRAPH controls within plus or minus ½ per cent regain. Mills that have never attempted to operate their slashers above half capacity now find it possible to safely increase slasher speeds 40% and more.

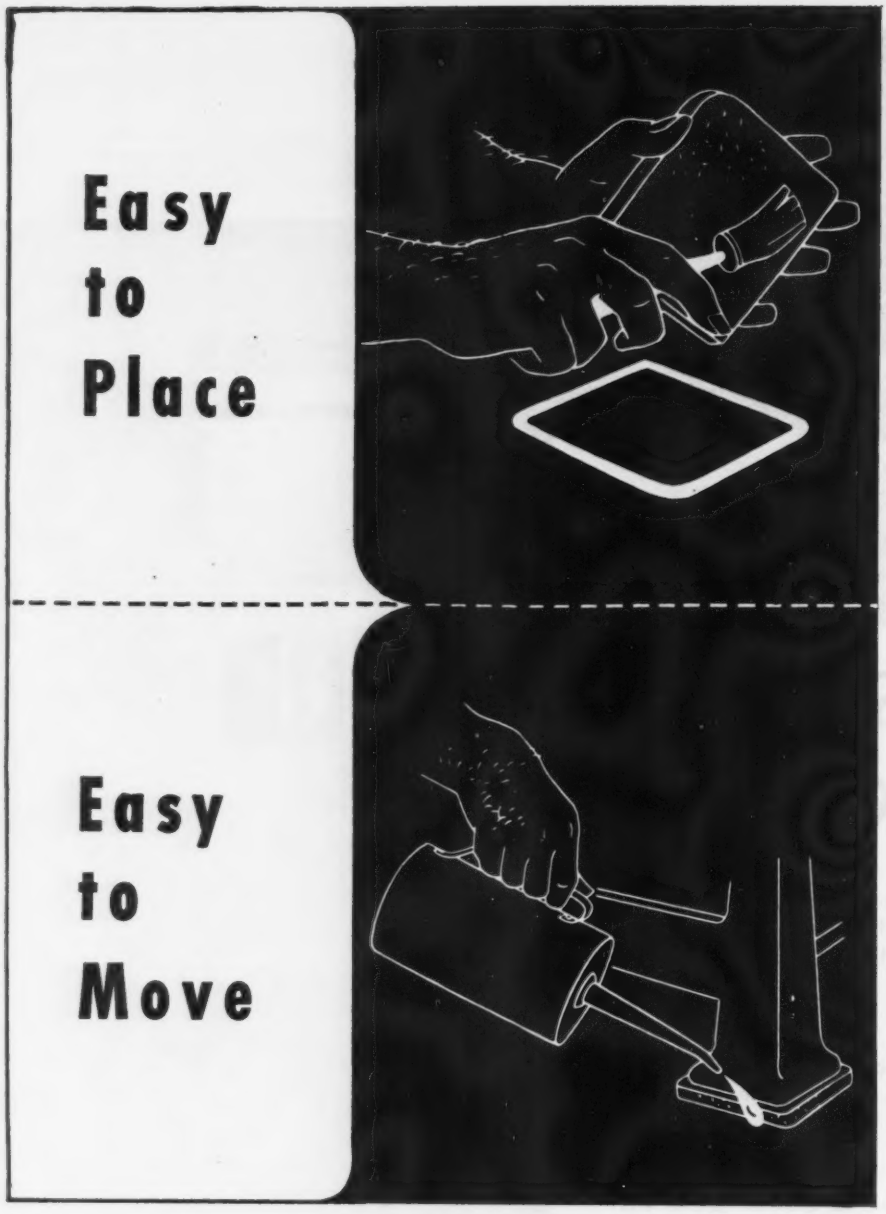
In one large, nationally known mill, since the installation of Brown MOIST-o-GRAPH Control, production has been increased to the point where the theoretical output of two slashers now equals the production of three slashers. *Write* THE BROWN INSTRUMENT COMPANY, *a division of Minneapolis-Honeywell Regulator Co.*, 4509 Wayne Avenue, Philadelphia, Pa. *Offices in all principal cities.* Toronto, Canada: 117 Peter Street—Amsterdam-C, Holland: Wijdesteeg 4—England: Wadsworth Road, Perivale, Greenford, Middlesex—Stockholm, 16, Sweden: Nybrokajen 7.

Send for Booklet

To get the complete story on Brown MOIST-o-GRAPH Control System, write for Booklet No. 9304. It fully describes the Brown MOIST-o-GRAPH Control System . . . instrumentation of slasher speed control, size box control and other helpful information which will aid in reducing costs in textile processes.

BROWN MOIST-O-GRAPH

To Measure and Control is to Economize



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There's no boring, no drilling, no damage to floors . . . when you anchor machines with Felters Unisorb Cushion Mountings. Simply cement felt pads to floor, set machines down . . . and you're ready for *smoother* operation with a minimum of vibration and noise.

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detectable near that point in the "building" of the roving bobbin. The desirable tension and lay should be studied in relation to the slippage point. Regarding the lay, some authorities state that the space between adjacent coils should be slightly greater on cotton than on rayon.

Also, some mills which have found that rayon absorbs the oil very quickly from oily bobbins have employed a paper sleeve between the roving and the wooden bobbin. This appears to provide a somewhat more satisfactory surface for rayon staple.

In running 1.5-denier 1½-in. rayon staple, the stronger yarns were produced when employing twist factors in the range of .60 to .75 for roving. However, from an operating standpoint many mills employ a range of .75 to .85.—(R-51)

Blooming Bins Are Eliminated By Mill

In reply to the query offered by R-38 concerning the necessity of cotton "ageing" in "blooming bins," I would like to make the following comments.

Having done considerable engineering work, and being assigned a number of times to make specific studies of opening rooms and equipment, an exact situation of two mills, running the same staple and grade of cotton, gives me reason to believe that I am in position to make an authentic analysis of this subject.

These two mills have built enviable reputations for quality products on fine combed yarns, ranging from 48s to 100s on Peeler, Egyptian, and Pima cottons, staples running up to 1½ in. The opening equipment of neither mill was adequate, or at least not operating to the best advantage of the cotton being processed.

One mill had blooming bins, the other did not.

The one with the blooming bins was getting the better breaking strength, but further study showed the advantage was being gained by mechanical speeds and settings on the cards.

The other mill, with blending feeders, was running its equipment at the proper speed, but improperly set to get the advantage of the opening that should have been realized on these good machines, and effort was being made to further open and clean the cotton with 5 beaters in the picker, which is not too good for the staple.

The mill with the blooming bins, after exhaustive study was made, is

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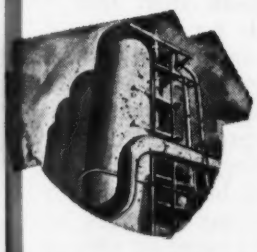
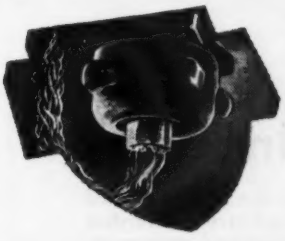
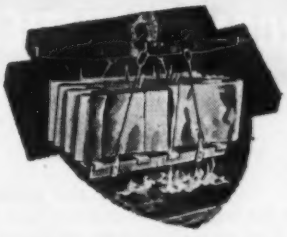


Petroleum
Alkylation, sulfonation, and improving color, odor, and stability of petroleum products.

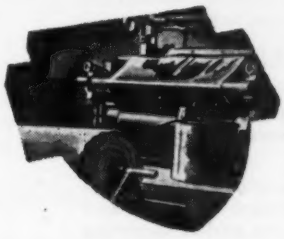


Rayon
Used in the spinning bath in rayon manufacture.

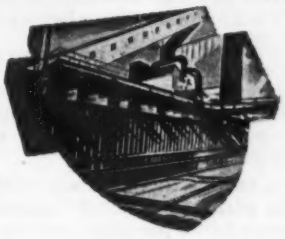


Steel
For pickling of steel sheets and castings; removes oxides and scales.

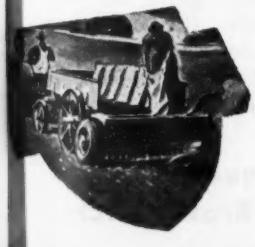
Paints
Raw material in production of pigments; for sulfonating drying oils.



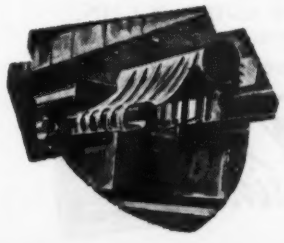
Sulfonation
Sulfonating vegetable oils for water, fire, and mildew-proofing fabrics and textiles.



Coke By-Products
For washing toluene and benzene, raw materials for dyestuffs and explosives.



Fertilizers
Used in super phosphate and ammonium sulfate production.



Textiles
For carbonizing wools and for the dyeing bath in production of textiles.

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Standard: From 60° Baume to 65% Oleum (114.6% H_2SO_4)
Special High Purity:
Diamond—66° Baume, Carboys Only
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● Assuming the great task of supplying the largest Armed Force in the world plus the civilian needs, the textile industry has further advanced its manufacturing technique, production facilities and personnel.

With these progressive steps, the matter of adequate and sanitary washing facilities has had attention,—and as in our other leading industries, Bradley Washfountains have been selected by many prominent mills.

MANY LEADERS USE BRADLEYS

Such mills as Cannon,—Pepperell,—Cluett, Peabody,—Pacific, Avondale, Industrial Rayon, Celanese—and hosiery mills as Kayser, Phoenix, Real Silk, Shannon Hosiery have their employee washrooms equipped with Bradley Washfountains.

Bradleys serve 8 to 10 persons simultaneously from a central sprayhead, taking the place of 8 to 10 "single-person" wash basins, cutting water consumption by 70 per cent, reducing piping connections and eliminating entirely the multiplicity of faucets and their maintenance.

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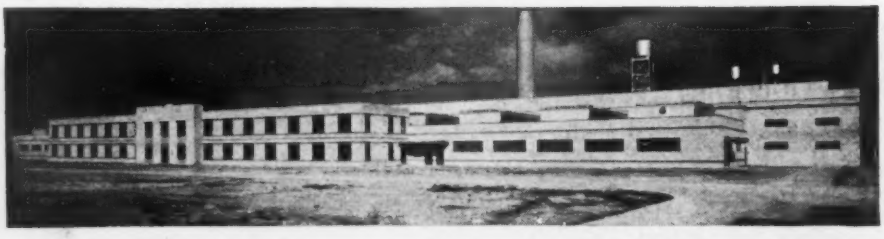
Modern plants like this—Industrial Rayon Corp.—gain efficiency and improve employee morale with Bradley Washfountains and Multi-Stall Showers.

BRADLEY *washfountains*



revamping its opening equipment, throwing out two obsolete bale breakers and eliminating the blooming bins. It is installing three blending feeders (to be run at about half the normal speed, closing the combing rolls as close as can be consistently run), a blending apron, a blending hopper, 2 lattice openers in tandem with a leaf extractor between them, and 40 feet of cleaning trunk in a line attached to the condensor and thence into the picker. The capacity of this mill is 320 carded pounds per hour, or approximately 400 net opened pounds per hour. It has a bale layout of 45 bales, which allows considerable conditioning of the cotton before it is fed into the blending feeders.

With this revamped opening room, labor savings are enough to pay for the needed equipment in approximately 2 years, along with less floor space required and the elimination of the blooming bins. This was a means of reducing the fire insurance premiums.

Blooming bins—an item that I have seen in mills for the past 30 years—are merely agents that allow a condition to effect itself that could be realized by using the proper equipment, run at the proper speeds, and with precision settings. By the elimination of blooming bins, fire hazards are avoided, processing costs can be reduced, a type of contention allowed to fade out; and, in the end, straight-line processing is further realized. (*R-62*)

Looks to Export Market

I read with interest the editorial in the April issue of TEXTILE WORLD on "A Glimpse at Our Future." I liked it, but I don't believe you went far enough. I am convinced that we should, more energetically, develop markets to supply properly our 135,000,000 people here, taking in, insofar as this is possible, the more than 40,000,000 Mexicans as our market, forgetting the rest. (*R-72*). Max C. Miller, Cumberland, R. I.

Comment Requested on Overcoming Broken Picks

I wish to ask for a discussion concerning correct ways of avoiding broken picks. In the mill where I am employed, we use the method which follows, but I do not approve of it for reasons I shall give later.

The yarn in question is 120 to 150 den. acetate and viscose rayon. The looms are the XK and XD Draper,

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Pioneering Accomplishments

W[illegible]DE THESE "FIRSTS"

★ **EXTRA TOUGHNESS**

★ **GREATER RESILIENCY**

★ **LONGER LIFE**

★ **UNIFORM CENTER TO CENTER DISTANCE**

★ **SPECIAL SLIDE ROD BEARING**
prevents gumming on rod . . . requires no dipping

★ **LASTING UNIFORMITY**
will not stretch . . . unaffected by humidity

Denman Pioneering Accomplishments in Rubberized Fabric Loom Pickers are best expressed in their *proven* ability to give mills

Lowest Cost Per Loom Per Year

Made by DENMAN TIRE & RUBBER CO., Manufacturers of the famous Denman [illegible]ickers

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The TERRELL MACHINE CO., *Inc.*

CHARLOTTE, NORTH CAROLINA

INTERCHANGEABILITY Speeds Maintenance

THE wide interchangeability of parts designed into "Renewo" and "Ferrenewo" valves has long proved a boon to maintenance men in making their job easier.

Since valves control the very life lines of productive processes—steam, air, water, oil, gas and other fluids —it just follows that every precaution be taken to insure their proper functioning.

Regular checking and inspection, and prompt servicing when necessary, will be repaid in more efficient performance and longer valve life, and may well prevent possible shut-down for more costly repairs later.

The simplicity of design of "Renewo" and "Ferrenewo" valves, with interchangeable parts, makes it easy to keep them in good operating condition, with minimum expenditure for maintenance.

Use the complete facilities of Lunkenheimer distributors.

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Here's how Interchangeability Speeds Maintenance

All parts of the valves above (except bodies and bonnet rings) fit each other perfectly. If, for example, you need a stem, disc or seat ring for the "Renewo", you can use the corresponding part of the "Ferrenewo" —*it is exactly the same.* This means fewer parts and speedier repairs.

LUNKENHEIMER VALVES

and the shuttles are the regular Draper. The trouble is that the filling at the end of each pick will fold under the shuttle between the shuttle box plate and the shuttle, causing the shuttle to cut the filling because the shuttle box plate is made of steel and the shuttle traverses directly over it.

A few fixers have placed a very fine piece of leather on the shuttle box plate thereby raising the shuttle slightly so that the filling does not become worn when the shuttle enters the box even though the yarn may fold beneath the shuttle.

My reasons for not liking this method (even though it has proven satisfactory in stopping broken picks) are that I do not think it will last long and it will wear the shuttle unnecessarily. I believe that the shuttle boxes should be set without any such patchwork even though it may mean putting in a new box. I should appreciate seeing in the Round Table a complete discussion on settings of shuttle boxes, the cause of broken picks, and how to fix them. *(R-47)*

ASTM Has Standard Mixed Fibers Regain

I have noticed in the April issue of TEXTILE WORLD on page 158 that a question was raised by one of your subscribers whether any regain standards have been agreed upon for a combination of cotton and rayon.

I would like to call your attention to the ASTM standard D 508–43 given on page 47 of the 1943 D–13 manual. This is called "Standard Methods of Testing and Tolerances for Yarns Spun from Mixed Fibers," and on page 48 there is given a formula to determine the commercial regain for various types of fibers.

As a matter of explanation, this standard was originally developed by the worsted and woolen yarn section of A-3, and later on, upon the request from Committee D-13, changed to include mixed fibers in general. *(R-71)*.

Transposition Error

Please note a correction of the figures shown in the lower right section of page 103 of the April issue of TEXTILE WORLD as follows:

From Denier	*To* Denier
4.252	4.252
21.260	21.260
50.315	53.150
75.287	78.662

LEIGHTON KNITTING MACHINES ARE *Flexible*

COARSE OR FINE STITCHES ARE PRODUCED ON THE SAME MACHINE

On the Leighton Transfer Machine there is a stitch control drum for each yarn feed.

Each drum has separate control for cylinder or dial needles. An individual adjustment is available for any feed at any time.

A maximum of 12 changes are provided on each drum for the production of one garment. When all 12 adjustments are not required, extra screws can be used as idlers. Changes are made automatically without stopping the machine to give maximum production.

Leighton operates horizontal needles from the outer dial towards the center. This reduces yarn strain.

COARSE STITCH
2½-CUT

Leighton stitches pass down over the exterior of the cylinder. The face of the fabric is in full view — an advantage on plaited fabrics.

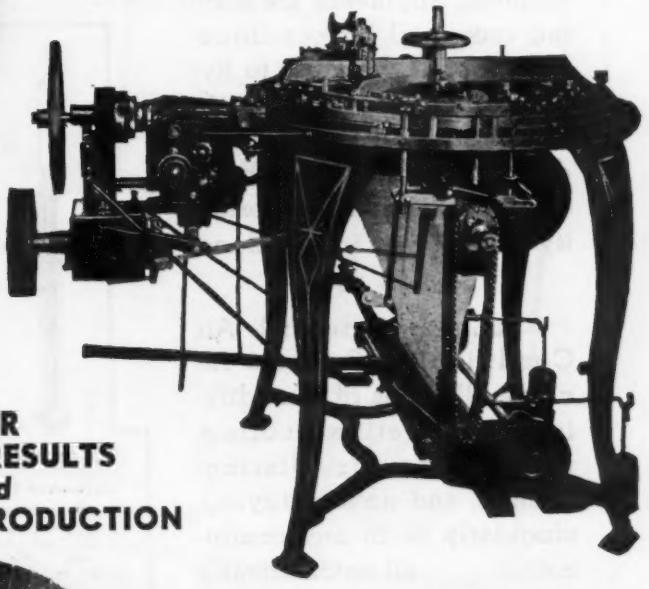
See the butts of the Leighton needles . . . wider apart than the gauge. Yarn is taken into the machine with a minimum of strain.

Leighton eliminates sharp bends—you knit soft spun yarns with less end breakage.

Each needle nearly completes its stitch before the next one starts. The Leighton diverging needles give the yarn more room — and allow the use of heavy or fine yarns on the same gauge machine.

Yes sir — it's flexibility in knitting you want TODAY — which means LEIGHTON.

FINE STITCH
10-CUT



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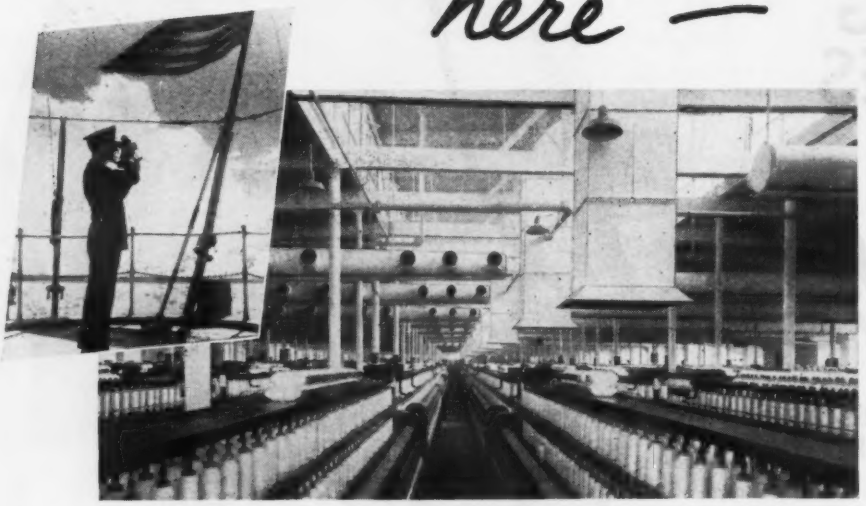
No Atmosphere problem here —



Clean—Fresh—Circulated air with the evaporative cooling effect that always makes the sea invigorating, is the basic principle of nature followed in the latest Bahnson developments of Industrial Air Conditioning Systems.

Worker Comfort air conditioning can be attained in a practical and economical manner by unitary or central station Bahnson Systems that are both flexible in operation and application, and simple in design.

Pioneers in the unit duct system of air distribution, Bahnson Engineers are solving industrial air conditioning problems relating to hygroscopic materials, static electricity and atmospheric dirt, with particular emphasis on human comfort—for priority and postwar installations.

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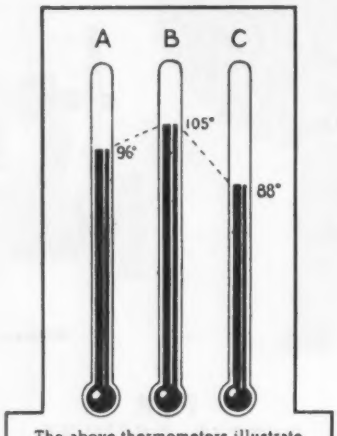
Bahnson Industrial Air Conditioning Systems include all types of humidifying, evaporative cooling, refrigeration air filtering, heating, and dehumidifying, singularly or in any combination . . . . all automatically controlled.



The above thermometers illustrate a hypothetical condition to show temperature ranges on a hot day

A—OUTSIDE TEMPERATURE.

B—NORMAL TEMPERATURE INSIDE MILL WITHOUT AIR-CONDITIONING.

C—INSIDE TEMPERATURE WITH BAHNSON AIR-CONDITIONING.

Bahnson System

AIR CONDITIONING ENGINEERS

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Questions and Answers

Formula for Making Crinoline

Technical Editor:

At present we are buying crinoline from the East and this involves freight, etc., in bringing it into our plant. We would like to make crinoline in our own plant since we have the machinery and the cloth available to do so. We would like a formula to use in the manufacture of this material. (8994)

Crinoline is usually made from a tobacco cloth, such as a 36-in., 44x40, 8.50, though the base fabric may be a light-weight sheeting. This fabric is run in both a bleached and unbleached finish. This width usually finishes 36-in. The finish is not generally as stiff as a straight inner-lining, but may be classified as a flexible, semi-stiff finish. Starching is an important feature of this finish; a typical formula would be as follows:

35–50 lb. thick-boiling corn starch
30–60 lb. thin-boiling corn starch or low-soluble, white, dextrine
½–2 gal. sulphonated finishing oil—75% to 100 gal.

Such a mix should preferably be applied on a tenter range consisting of mangle and tenter frame, rather than on cans to avoid pick-off. If high gloss or tackiness is desired, 200 or 300 lb. of high-soluble, white dextrine can be substituted for the starches mentioned. In any case, it would be desirable to secure a sample of the desired finish and then vary the ingredients in the formula accordingly.

Methods of Producing Linen-Like Finish

Technical Editor:

We are interested in methods of producing linen-like finishes on cotton cloth, in permanent organdy finishes, and the crease-proofing of cotton cloth. (8991)

Linen-like finishes on cotton cloth have been produced in several ways, first, by alkali soluble celluloses; sec-

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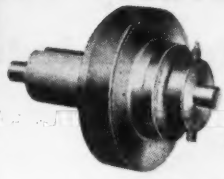
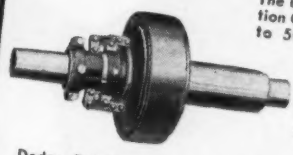
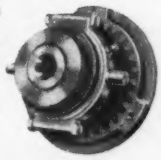
to save Time, Power and Machines



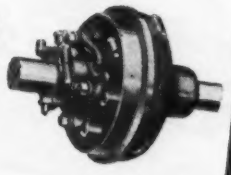
The Diamond "D" Friction Clutch . . . 1 H.P. to 470 H.P. at 100 R.P.M. Rugged — compact — safe — easy to operate, adjust and maintain.



The Dodge Solid Friction Clutch—1.3 H.P. to 50 H.P. at 100 R.P.M. Simple — rugged, powerful, easy to operate, adjust and maintain.



Dodge Rolling Grip Friction Clutch. ½ or 1 H.P. at 100 R.P.M. No toggles, fully enclosed, easy to operate, adjust and maintain. Adapted for high speed.



Dodge Split Friction Clutch. 6 H.P. to 1000 H.P. at 100 R.P.M. Split construction adapted for large, heavy slow-speed applications.

The inherent ruggedness of Dodge Clutches from ½ H.P. to 1000 H.P. capacity insures you against loss of production hours, dissipation of power and excessive wear and tear on machines.

Transmissioneering provides not only advanced design . . . it also stands for high quality of materials and workmanship as well as proper application which means the "right clutch for every job."

The Dodge Transmissioneer, your local distributor qualified by factory training, can help you select the right clutch for power drives or machine applications.

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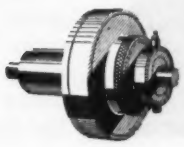
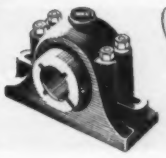
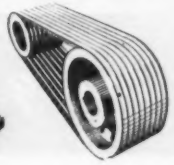
The Sign of the Dodge Transmissioneer

The Right Drive for every Job







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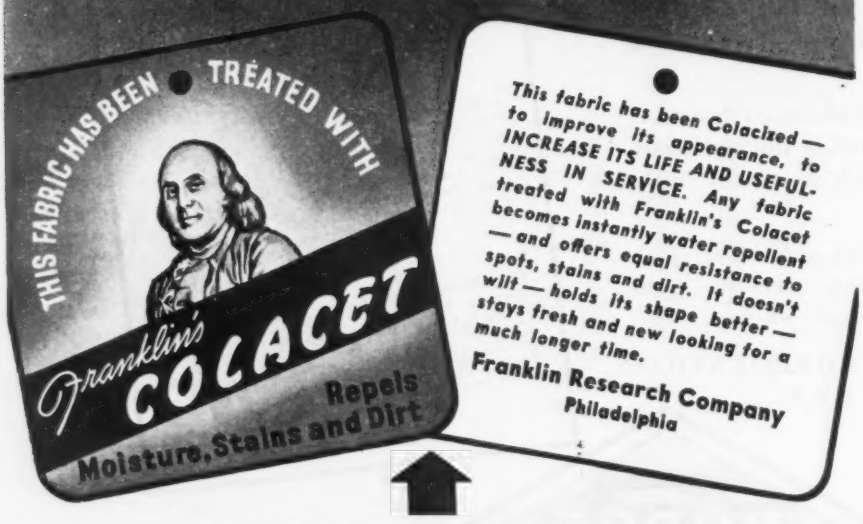
No. 9

In addition to all their other qualities, suppose your fabrics had high water repellency.

Wouldn't that increase their desirability?

If so, investigate COLACET, a concentrated *stable* emulsion developed especially for the textile industry.


THIS FABRIC HAS BEEN TREATED WITH
Franklin's
COLACET
Repels
Moisture, Stains and Dirt
This fabric has been Colacized — to improve its appearance, to INCREASE ITS LIFE AND USEFULNESS IN SERVICE. Any fabric treated with Franklin's Colacet becomes instantly water repellent — and offers equal resistance to spots, stains and dirt. It doesn't wilt — holds its shape better — stays fresh and new looking for a much longer time.
Franklin Research Company
Philadelphia

FEATURE THIS TAG

Write today for full details

ond, by one of the harder thermoplastic acrylic resins; and third, for a semi-permanent finish, by a combination of the ureaformaldehyde resins with starch.

Satisfactory results have been accomplished on permanent organdy type finishes only by use of the Heberlein process, or other processes, as several different treatments can be used.

One process, for example, consists of treating the cloth with 53° Twaddell caustic soda, at a temperature of 10° C. for approximately one minute, after which the caustic is washed out and the cloth subsequently treated with sulphuric acid of at least 108° Twaddell. Variations in effect may be produced by varying the concentration of the alkali and temperature as well as time in the sulphuric acid.

A second process, which produces a similar effect, consists of passing the cloth through a 55–65% sulphuric acid bath containing 0.5–1.0% of 40% formaldehyde. On coarser fabrics, the low-temperature mercerization is said to produce linen-like finishes rather than those of the permanent organdy type. The quality of the cotton, fineness and twist of the yarn plays an important part in the effects obtained; as does tension, temperature, and time of exposure. Needless to say there is some hazard involved in the sulphuric acid treatment, as care must be given to the removal of the sulphuric acid so that no degradation occurs.

As regards crease-proofing of cotton cloth, while this problem has been and is being worked on, no completely successful method has so far been developed.

Warp Streaks

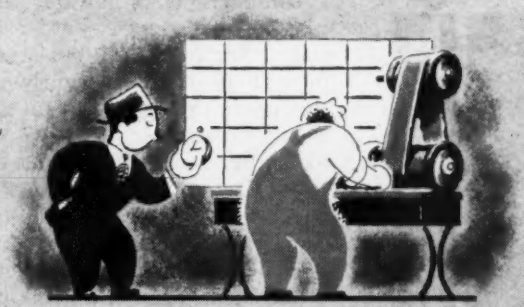
Technical Editor:

The attached sample, if held to the light, will show many warp streaks. If the cloth is held quite taut warp-wise, it will be noticed that these streaks appear tight. However, they are not taunt enough to produce a crinkle in the cloth but it certainly doesn't help the appearance of the cloth in any way. I wonder if you would be able to tell me what would cause these various streaks. I do find a slight variation in twist on some individual ends but as most streaks appear wider than one end, I do not find more than 1 or 2 ends showing the variation in twist at any one place. (8985)

The warp streaks in the sheer are quite common to this fabric, especially the "strained ends", three of which appear on one side of the fabric. These strained ends are identified by the fact that they have pulled the

QUICK QUIZ FOR TEXTILE MEN

Three Answers that May Make You a Fortune!



Q Are you interested in "M.P.T."* for your machines?

A The chances are "Yes." Here's why: when machines stop too often and too long for lubrication, that's lost *productive time*. In one case, Alemite Lubrication Specialists cut lubrication "time-outs" on each of a battery of machines from 17 minutes per shift to 3. This added 5 hours of "M.P.T."* to each machine each week! In a year that amounts to 260 hours! Checked your lubrication time lately?

**More productive time.*

Q Are your lubrication methods as safe as they can be?

A Probably! But listen to this case: a big piece of machinery, 65 feet high, 100 feet long was dangerous to lubricate. The oiler had to go across a catwalk, lean over and reach down to get to remotely located bearings. Alemite Lubrication Specialists recommended a centralized system where all 59 bearings are lubricated easily and safely from 3 locations. Checked the safety of your machines recently?

Q Do you need the number of lubricants you're using?

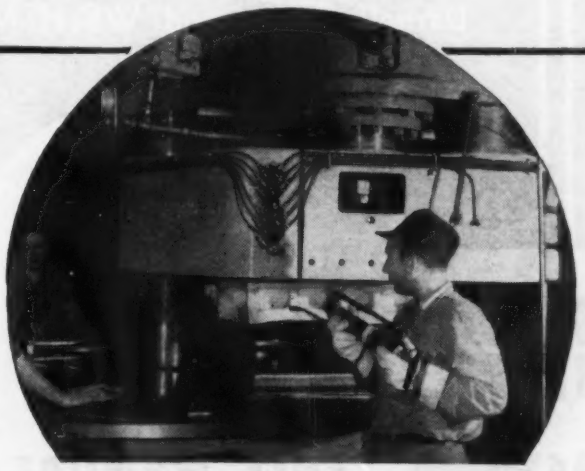
A It's a good point. Fact is, in scores of plants, Alemite Lubrication Specialists have reduced lubricant inventory from 30 to 75%. In one case, for example, the number of lubricants was reduced from 38 to 18. Besides the money-savings and greater efficiency, the result was less confusion and human error. You might look into your inventory of lubricants and oils.

Can "LUBRI-*chaos*" Rob You of Money, Machines and Production?

It surely can! And "Lubri-*chaos*" is found in the most modern plants. Today, with wartime schedules of production, " Lubri-*chaos*" has shown how it really can cut into plant efficiency.

Alemite, as pioneer in the handling, distribution, and application of lubricants has long crusaded against "Lubri-*chaos*." As a result, the modern Alemite methods are now recognized as the answer to "Lubri-*chaos*" in scores of factories all over America.

The Alemite method, including a new "Coloroute" system of "barrel to bearing" lubrication, will play an important role in boosting peacetime production to meet competition. Why not consult with Alemite Lubrication Specialists about readying your machines now to gain the competitive advantages of the world's most modern lubricating methods? There is no obligation. Alemite, 1888 Diversey Parkway, Chicago 14, Illinois, or Belleville, Ontario.



One of Alemite's Centralized Lubrication Systems—an accurate, dependable method of lubricating machine bearings no matter how remote from one location. Alemite Systems are available in a number of types to meet the requirements of any machine. Write for complete information.

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body color into the design and vice versa. They generally are traceable to excessive tension during the processing of the highly-twisted yarn in the warp. These three ends would tend to indicate that uneven and abnormal tension during throwing and preparation (one or possibly both departments) might be responsible for all of the streaks, but in fairness I hasten to say that some of the other streaks might be caused by over-steaming the yarn during twist setting or by an insufficient boil-off of the grey cloth.

It is most likely that you have here a combination of possibly all three troubles. We have not tested the warp ends for twist, but your statement that it varies slightly supports the belief of high tension, especially if this variation is in the direction of too little twist. If you have access to a single-end incline plane tester, you might be able to demonstrate if these streaks are caused by overstretching of the yarn. However, you cannot depend upon this because during finishing the yarn is permitted to recover, which will account for the tightness of the warp threads which you have noticed.

Testing Rayon

Technical Editor:

We wonder if you could supply us with some information which would be most helpful to us for the working of our mill. The questions we want to ask you are the following:

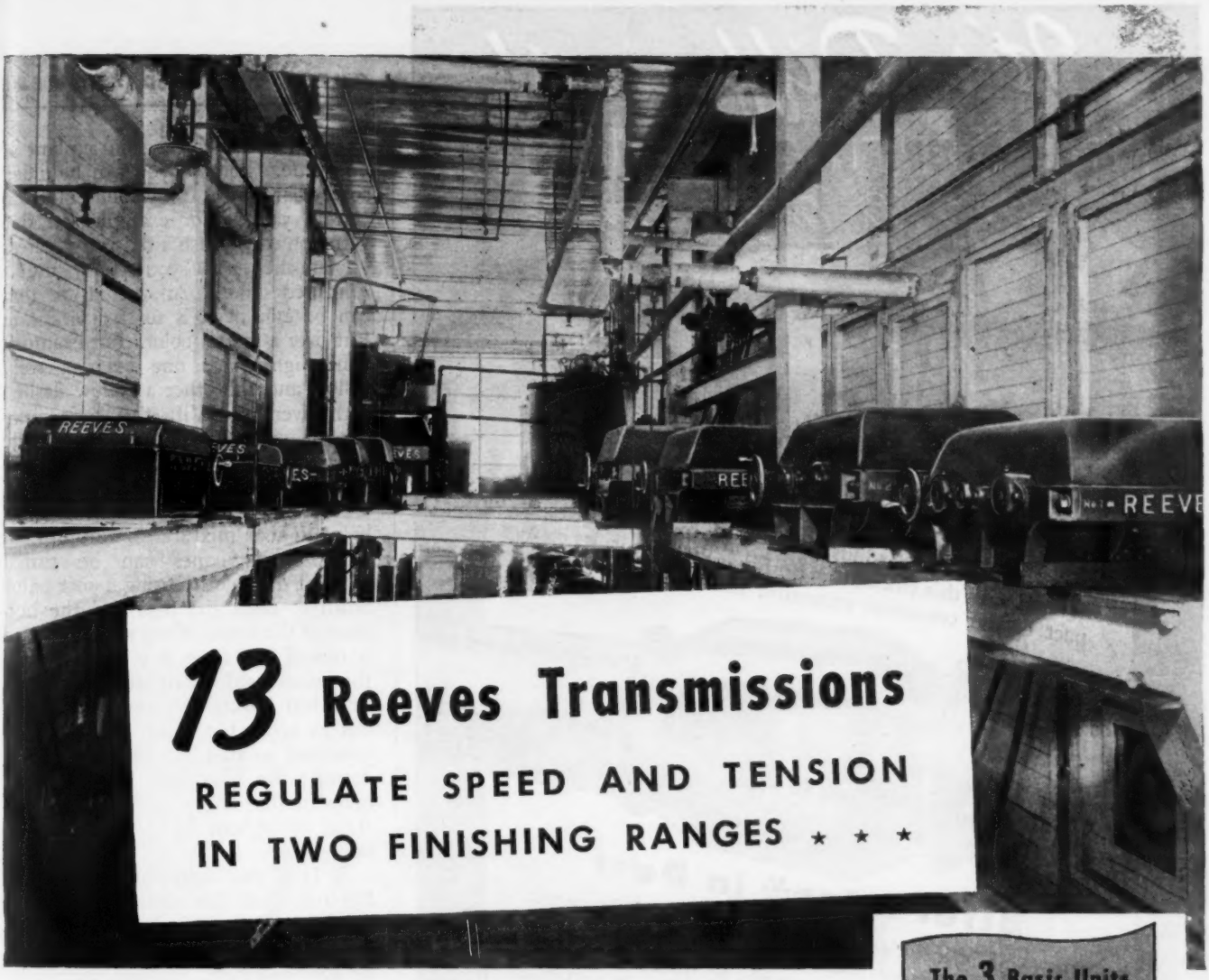
1. What systems are applied in the spinning and throwing or redrawing departments to avoid the mixing-up of yarns of different deniers when one is working with 25 to 30 colors?

2. In what way can acetate cones be dyed without damaging the yarn's normal resistance and the maximum of twist which can be applied to it per inch, according to its different deniers?

3. Can the same fugitive dyes be used both for acetate and for viscose rayon? (8994)

1. In the United States two textile systems are used to differentiate the various yarns during the throwing process. One is to tint the yarn using a fugitive color, which I judge you are currently doing. The other is to identify the various yarns by means of markings on the bobbins. There are two methods for doing this. One is to paint various symbols on the bobbin head, using a quick drying lacquer. The other is to paste or insert paper tags on each bobbin to identify the yarn that it contains.

Twenty-five to thirty colors seem to



13 Reeves Transmissions

REGULATE SPEED AND TENSION IN TWO FINISHING RANGES ★ ★ ★

● In the operation of a finishing range, two things are exceedingly important: the speed of the cloth through the range; and the tension of the cloth at each stage of the range, to prevent undue stretch or shrinkage.

In the two ranges shown here, one with Mangle and five stacks of cans, and the other with Mangle and six stacks, a No. 5 Class E (4:1 speed ratio) REEVES Variable Speed Transmission is the master control, regulating cloth speed in the range to the right. A No. 6 Class E (4:1 speed ratio) regulates cloth speed in range to the left.

Other sizes of REEVES Transmissions, each different and carefully selected for horse power and speed ratio, drive the mangles, and accurately regulate cloth tension between the stacks of cans.

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The speed and tension may be changed at any one place along the range, without changing the relationship or tension of cloth between any of the other stacks of cans. When once pre-set for any desired shrinkage or stretch, this setting is maintained *accurately* regardless of speed changes made through the master control for higher or lower cloth speed.

Ease and accuracy of adjustability, and proven dependability for this and many other applications, have made REEVES the predominate speed control method of the textile industry. For additional data, write for 128-page Catalog WG-435.

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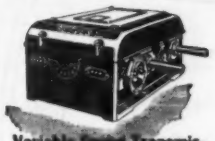
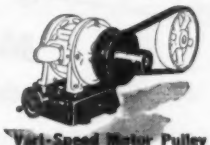
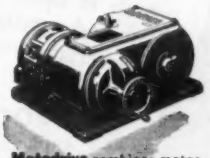
The 3 Basic Units in the REEVES LINE



Variable Speed Transmission for infinite speed adjustability over wide range.



Vari-Speed Motor Pulley converts any standard constant speed motor to a variable speed drive.



Motodrive combines motor, speed varying mechanism, reduction gears.

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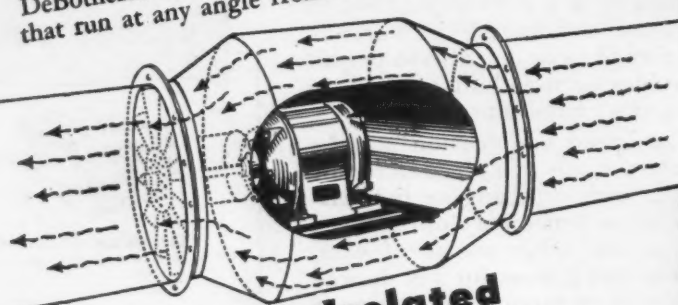
This VENTILATING UNIT* installs in the duct

Regular Duct

Ventilation of hazardous fumes and corrosive gases is assured with this efficient DeBothezat Bifurcator. Its compact design conserves corrosion resisting metal alloys.

Bifurcator* in Duct

Bifurcator is installed just like a section of ductwork. This eliminates elbow bends and supporting platforms. DeBothezat Bifurcators can readily be installed in ducts that run at any angle from horizontal through vertical.



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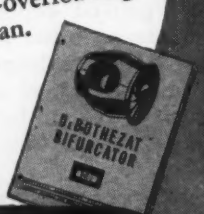
Motor is completely isolated from fumes. Air stream is bifurcated or bypassed around the motor chamber which is open to atmosphere at both ends. Motor is protected against burning out by the non-overloading characteristics of DeBothezat's axial-flow fan.



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De Bothezat Bifurcators*

DE BOTHEZAT DIVISION of AMERICAN MACHINE AND METALS, INC., EAST MOLINE, ILLINOIS

be quite a few to have in a plant at one time. Perhaps you can be aided somewhat by not using solid colors on certain yarns. For example, on one yarn you could flash a red tint whereas on another yarn you could use a solid red color. Another trick that can be employed is to flash a darker tint over a lighter color. For example, you might have one color a solid yellow and the other a yellow flashed with lavender. With this large number of colors you are undoubtedly already employing a device of using a light color in a light denier and a darker color in a heavier yarn. This helps to keep mixtures to a minimum.

2. Acetate cones can be tinted without damage by using a soft paint brush to mark the tops and the bottoms of the cones. Then when the yarn is run-off the cone it is flecked with the colors used. Particular care must be taken during this operation so as not to apply too much liquid to the yarn and so that the brush does not damage the filaments. It is recommended that the yarn be allowed to stand for at least 36 hr. to dry before being used.

3. It is the exception rather than the rule that the same fugitive tint can be used both for acetate and for viscose rayon. The rule that should be followed here, without exception, is to test each tint on the yarn it is to be used before employing it in any quantity. In addition every tint to be used should be rechecked for fugitivity at least once a week. It is often the case that tints which are fugitive from viscose yarns will stain acetate. You will find considerably more difficulty in securing satisfactory acetate tints than viscose tints.

Be sure that the tints are tested for fugitivity under the conditions in which they will be employed. For example, if the yarn is to be steamed be sure that the test of the tint before use includes steaming.

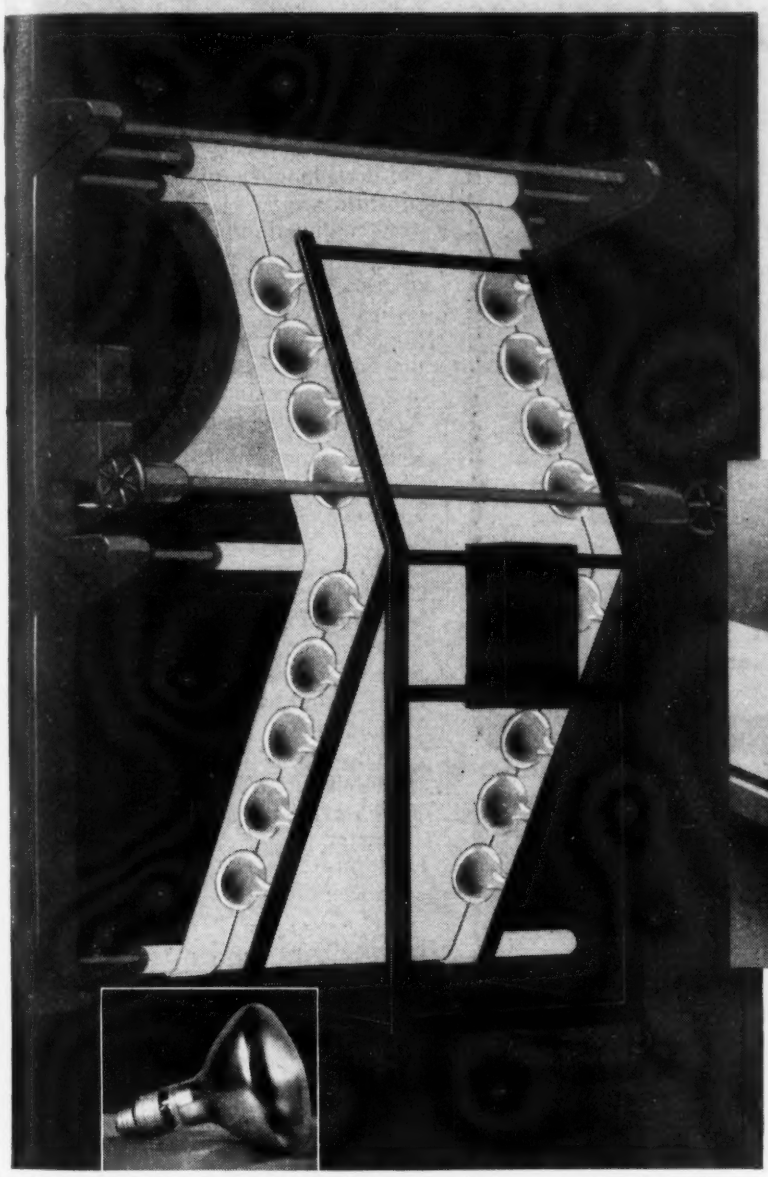
Olive Oil Substitutes for Wool Combing

Technical Editor:

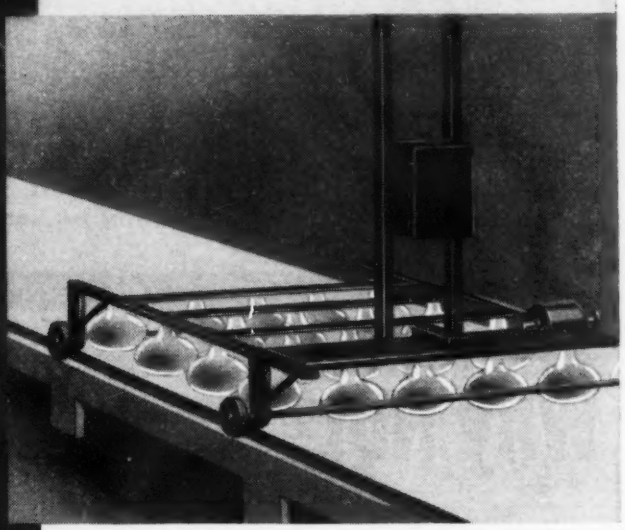
Wartime conditions have created a shortage of olive oil. Our mill formerly used pure olive oil for combing. We then tried coconut oil with success, but present WPB limitations made it difficult to obtain this product. Please advise us what substitutes are available. (8995)

Various substitutes have been developed to replace both olive oil and coconut oil such as glyceride sulphonates, lard oil and mineral oils. How-

G-E LAMPS CUT DRYING TIME TO SPEED UP TEXTILE OUTPUT



These G-E drying lamps help provide uniform drying over entire cloth surface of varying thickness.



Installation of G-E lamps speeds ink drying on fabric.

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INFRARED energy has amazing drying qualities! Almost unlimited are its many applications that save time . . . increase production . . . cut costs and save man-hours.

The fact that G-E Drying Lamps are successful in stepping up the output of much needed textiles, is something worth thinking about. It offers a practical way to gain added production using your present equipment and available manpower.

Are you faced with a problem in textile drying? It will pay you to consult an expert in G-E drying lamp applications. Interested? Get in touch with your nearest G-E Lamp Office or write General Electric, Div. T-G, Nela Park, Cleveland 12, Ohio.

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ever, it must be remembered that large quantities of wool are combed by commission houses. Fabrics are woven from yarns spun from wools which may have been combed by different houses. If the finisher does not know the type of oil or preparation used during oiling, difficulty will be encountered in finishing and may result in differences between pieces. Hence, the finisher should be informed of the oil substitutes used.

A combination of mineral oil and lard oil may be used. Equal portions of each oil, by volume, are used to form the blend. Quality of the resulting oil blend is maintained by purchasing mineral oil and lard oil in accordance with specifications prepared by NAWM as follows:

Refined mineral oil (Specification P-1)
Flash point .....400° F. Min.
Viscosity at 100° F.
190–210 Saybolt Secs.
Pour .....30° F. Max.
Color N.P.A. .....2½ Max.
Neutralization No. .....0.10 Max.
Saponification No. .....2 Max.
Evaporation loss ..... .25 Max.
Light stability—There shall be no more than a barely perceptible change in color when worsted cloth containing 10% ± 1 of the mineral oil is exposed for 20 hr. in the Fadeometer.

Lard oil—Now known as grease oil (Specification L-1)
Grade .....Extra winter strained
Free fatty acid 2–4%
Cold test .....40–45° F.
Specific gravity ..... .912–.919
Saponification value 193–198
Iodine No. 65–76
Unsaponifiable matter..1% maximum
Color N.P.A. .....2 maximum

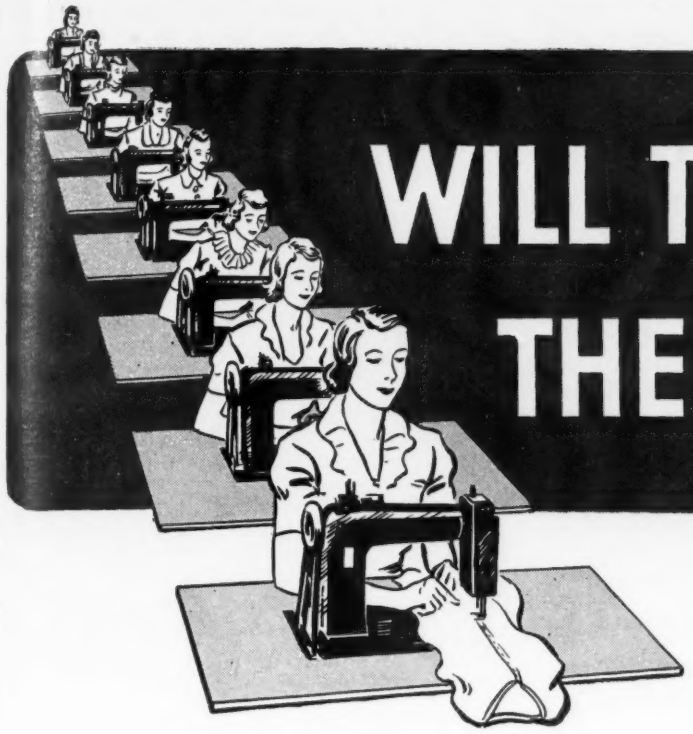
The oil is applied to the wool in approximately the same quantities and by the same methods as used for olive oil. Those mills that do not want to prepare their own oils may, if they desire, purchase prepared oils for this purpose that are available.

Napping Blankets

Technical Editor:

We are inclosing two samples of a 50% new wool and 50% shoddy blanket. One of these samples was napped wet and the other dry. We are wondering if the wet napping will make the blanket tender and whether this is a satisfactory nap for this quality blanket. (8983)

The wet napped blanket has a better cover and the strength does not seem to be injured. After wet napping and



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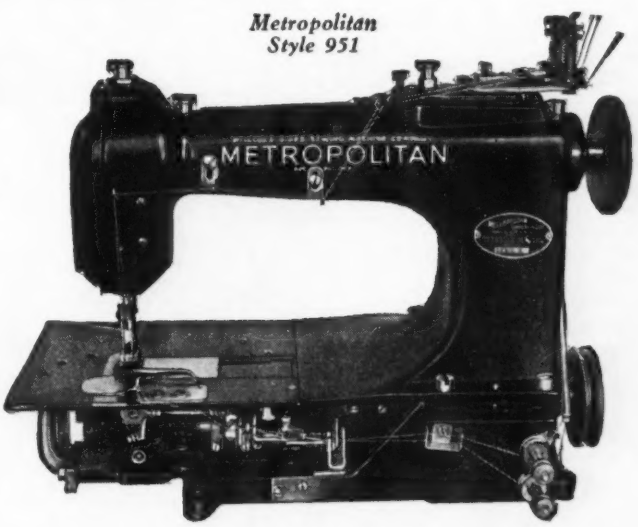
Sewing equipment has led an extremely hard life during the past few years. A great many machines have been working day and night producing war equipage and the chances are, this extra strain has taken the best of the lives of most of them.

How many of these derelicts will be able to measure up to the increased production demands which will be expected of them on post-war wearing essentials? No one knows without a careful check up.

We recommend, therefore, an analysis of all sewing equipment and especially that which has seen double duty. Our engineering staff can help you to decide on future needs and also make recommendations on plant modernization.

RIGHT NOW — we recommend to manufacturers of clothing, dresses, knit underwear, work shirts, wash suits, and similar garments, our high speed Metropolitan Flat Bed Lap Seam Felling Machine, Style 951, which incorporates many new and exclusive improvements, heretofore unattainable in this particular model. And —Fortunately—we can make immediate delivery on reasonable quantities.

Metropolitan Style 951



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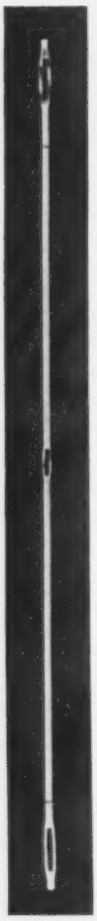

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drying, give the material about two runs each side on a double-action napper with the energy set so as to emphasize the tucking-in effect. Test a sample for strength, and if it is still strong enough, give another run on the face to enhance the appearance and produce a fuller hand.

Size Film Test

Technical Editor:

We would like to know the method and procedure that many of the rayon mills are using in making so-called "film tests" for predicting the possibilities of untried size formulae on rayon and acetate rayon.

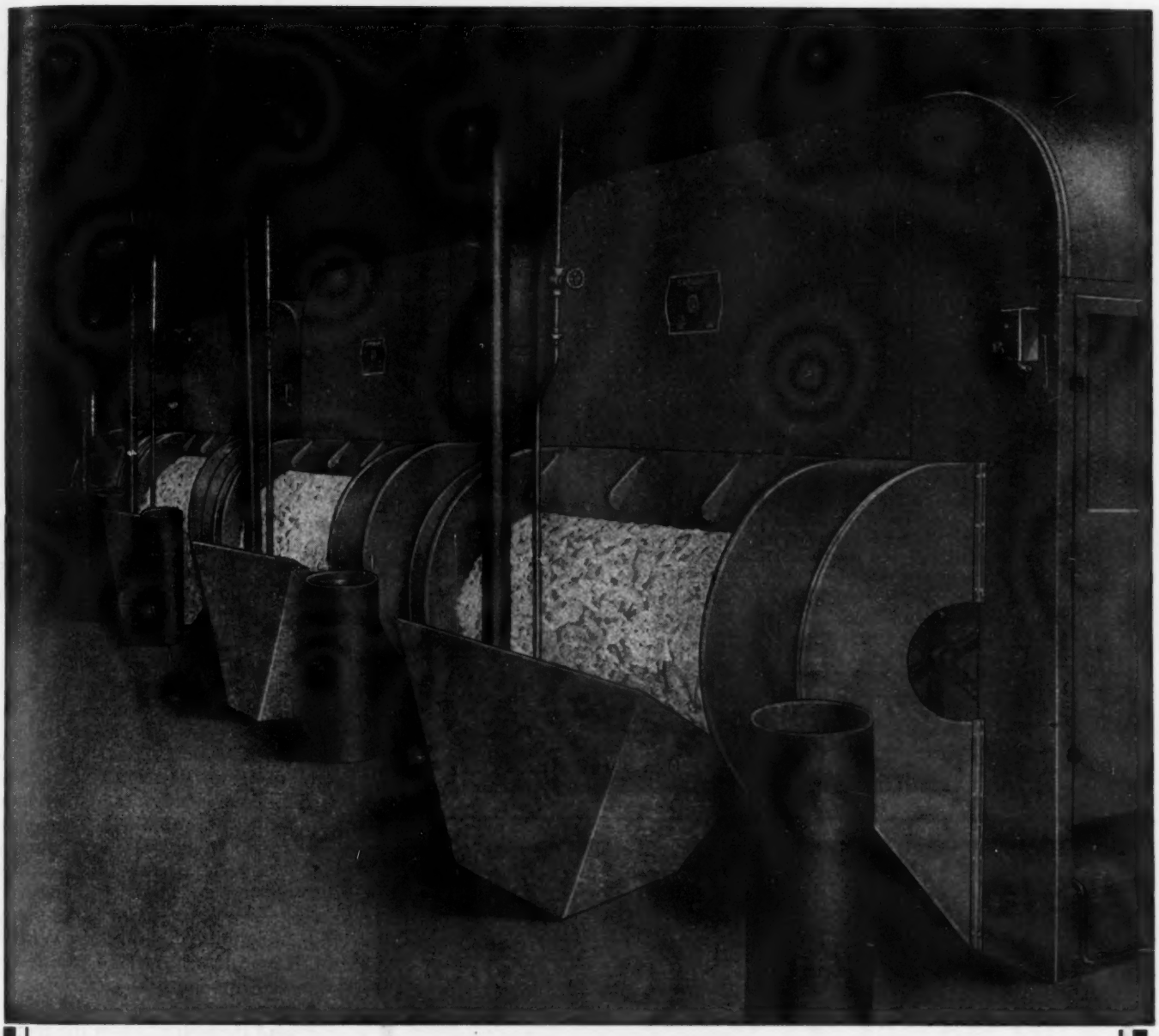
We have been given to understand that this method has been the most successful means to date, and we shall appreciate as complete a test method outline as possible for running these film tests. (8972)

The procedure in making so-called film tests is quite simple. The test, as employed by most acetate weaving mills, is not very scientific. It consists of taking a small quantity of the sizing solution at a predetermined temperature and pouring it on a clean pane of glass. This solution is allowed to dry overnight in a level position and then it is examined for softness, toughness, or brittleness with a common pocket knife.

This procedure will not show any slight variation between size solutions; but you may be surprised to note how much difference it will show from formula to formula. The method is also quite good for comparing the size in the size box at the start of a set and at intervals while the set is run and at the end of the set. Its chief value is that it permits making up small quantities of a new formula and testing before applying to yarn. Unless you are sampling for the charge of a size solution as the set is being run, take all of your samples from the make-up or storage kettle. This is so that your comparisons will be on the same basis.

Plants which have an air conditioned laboratory find it advantageous to allow the samples to dry in the air conditioned room and to inspect them under such standard conditions.

This method of testing size films becomes increasingly valuable as more films are inspected. A film that is flaky and brittle and will not scrape off the glass in a ribbon probably will impart tear marks, particularly on underwear fabrics. Conversely, a size film which is soft and gummy and which will come off in a ribbon will probably give you a soft warp.



A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

• • • THIS IS THE IMPORTANT FACT!

Advantages of this modern installation

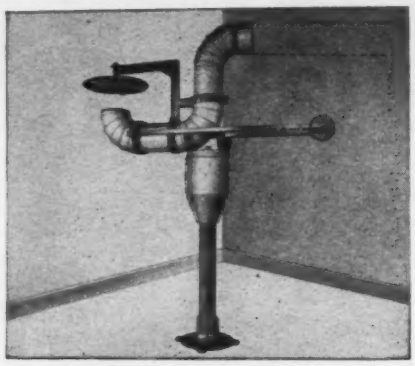
— Stock dried at lower temperatures — The use of low pressure steam
— Lower power consumption — Less floor space required
— Costly repairs and breakdowns eliminated — A better product

Why not let SARGENT solve your Drying troubles?

Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.



TRUSLOW* BLENDER (patented)

Synthetic Fiber Blending

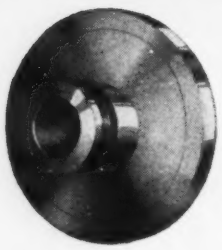
Synthetic fiber miracles, undreamed of yesterday, have become a fact in the textile industry today. Completely thorough blending of spun rayon, wool and cotton with fibres of other raw materials is more essential than ever before.

The Improved New Model Truslow Blender has been developed to provide thorough blending of almost all types of natural or synthetic fibers. The stock is blown through piping to the Blender. It then passes through a rotating arm and is blown up against the vanes of the canopy—making it revolve and distribute the stock in the form of a heavy snowstorm.

* Reg. U. S. Pat. Off.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS

Worn Parts Reconditioned
actually outwear new ones



for full-fashioned knitting machines to their exact original size and shape. And one special processing gives T & S Reconditioned Parts a more enduring surface than the same parts had when new. Satisfactioned guaranteed.

For Example: **Rollers.** We turn roller down and shrink on a Thomas & Skinner Long Life Tire made from special wear-resisting material. We also grind surface to correct diameter.

Thomas & Skinner Reconditioning Service restores cams, gears and other parts

T & S Products

We manufacture an extensive line of quality products for full-fashioned hosiery mills including Jacks, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines, Locking Dials.

Thomas & Skinner Steel Products Co.
1119 EAST 23rd STREET • INDIANAPOLIS 5, INDIANA

BOOSTING EMPLOYEES' Morale

Business Men Visit Army Camps

Approximately 2,000 business men from business associations in ten southern states visited seven Army camps on "Infantry Day," June 15. They included representatives from the Georgia Cotton Manufacturers' Association and the Associated Industries of Georgia, who went to Fort Benning, Ga.; the South Carolina Cotton Manufacturers' Association, who went to Fort Jackson, S. C.; the Virginia Manufacturers' Association, who went to Camp Pickett, Va.; the Mississippi War Activities Committee, who went to Camp Shelby, Miss.; the Associated Industries of Kentucky, who went to Camp Breckenridge, Ky.; the Indiana Manufacturers' Association, who went to Camp Atterbury, Ind., and another group from Wisconsin, Illinois, Michigan and Minnesota, who went to Camp McCoy, Wis.

The visitors donned khaki for a day and went through much of the routine of the various camps to "get the feel of things."

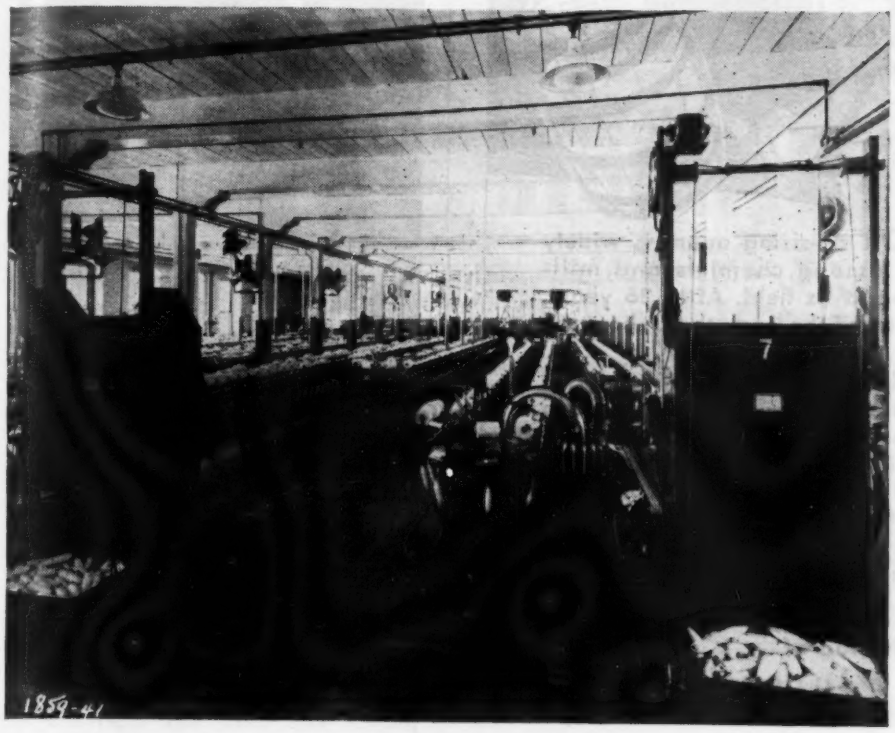
Mills Cooperate in Local Advertising

Several textile manufacturing concerns were represented in a double-page advertisement captioned "America Honors Her Heroes Memorial Day," published in the *Manchester Union*, Manchester, N. H., May 30. They included Amoskeag Industries, Inc., Brookshire Knitting Mills, Manchester Hosiery Mills, and Kenmark Mills, Inc.

Meets War Bond Quota Before Campaign

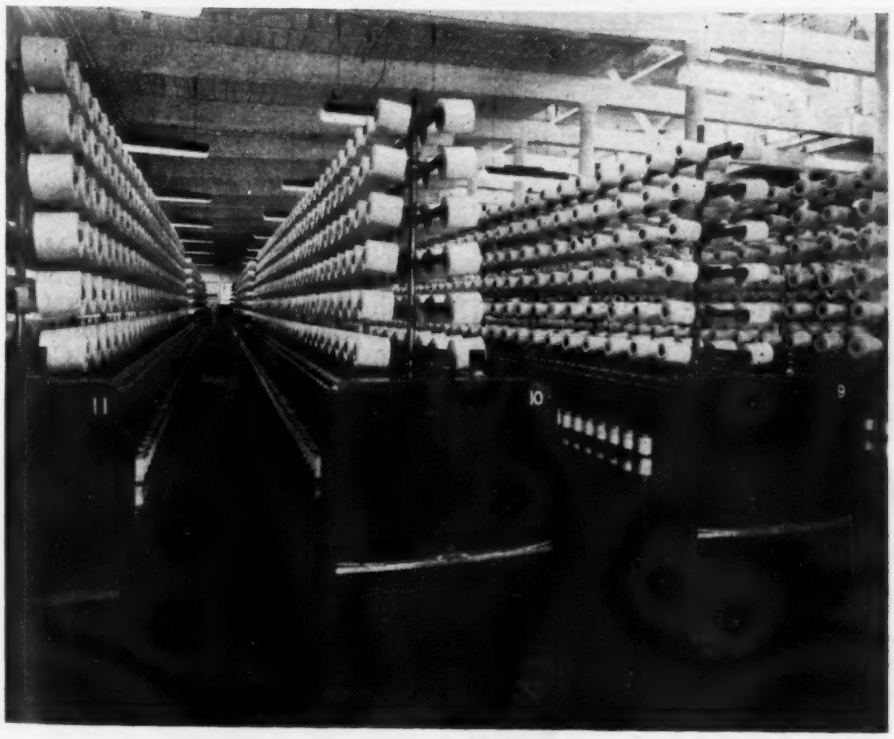
Forty-eight hours before time for the Fifth War Loan campaign to open, Morrowebb Cotton Mills Co., Dallas, Gaston county, N. C., announced that it had gone over the top by selling

AUTOMATIC WINDING FOR TWISTERS



Winding Average hourly production per operator 900 to 1000 bobbins per hour.

2-oz.	Bobbin	. . . .	112 lb. hr.
3-oz.	"	. . . .	169 " "
4-oz.	"	. . . .	224 " "
5-oz.	"	. . . .	280 " "
6-oz.	"	. . . .	338 " "
7-oz.	"	. . . .	380 " "
8-oz.	"	. . . .	448 " "



Large 5 to 6 pound cheeses in creel. On average work one set will run 100 hours. Pieces go back directly to winders to be filled up again

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative, Mr. L. S. Ligon, Greenville, S. C.

DIASTAFOR de-sizing agent is widely recognized among chemists and mill-owners as the all-time champion in its field. After 36 years, DIASTAFOR still remains the choice of the trade throughout the nation.

DIASTAFOR'S unbeaten record is the result of the wonderful performance it always gives. Cottons, mixed goods and rayons treated with DIASTAFOR are smooth, supple and flawless. Their quality meets even the most rigid tests of the microscopic eye and the experienced touch. And there is never any danger of discoloration, impaired tensile strength or injured fibers when you use DIASTAFOR. There's only one DIASTAFOR. For further information, ask our technical man or write to

FLEISCHMANN'S DIASTAFOR
Diastafor Division of
Standard Brands Incorporated
40 Worth Street **New York 13, N. Y.**

DIASTAFOR
36 YEARS OF SATISFACTORY RESULTS

Sterling Ring Travelers

GOING AHEAD

Our Forces are GOING AHEAD on all fronts. How about your Spinning and Twisting? Is your work GOING AHEAD in these times? Let STERLING help you to GO AHEAD.

Southern Representatives

GEORGE W. WALKER, Box 1894, Greenville, S.C.
D. J. QUILLEN, Box 443, Spartanburg, S.C.
SOUTHWEST SUPPLY CO., Box 1487, Dallas, Texas.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

JULIAN M LONGLEY, general manager, American Thread Co., Tallapoosa, Ga., presenting flag at the recent flag-raising ceremony at the plant. There was a barbecue luncheon for the 2,000 workers and guests who attended the event.

its entire quota of $5,000 in E bonds. The amount exceeded $50 per employe. The drive was organized by Mrs. J. Wirt Summey, Miss Thelma Hoffman, Mrs. J. F. Peach and Superintendent A. J. Beauchamp, of the mill. Mrs. G. S. Spargo and Mrs. D. L. Friday are co-chairman in charge of the women's division of the campaign in Dallas.

Recent "E" Awards

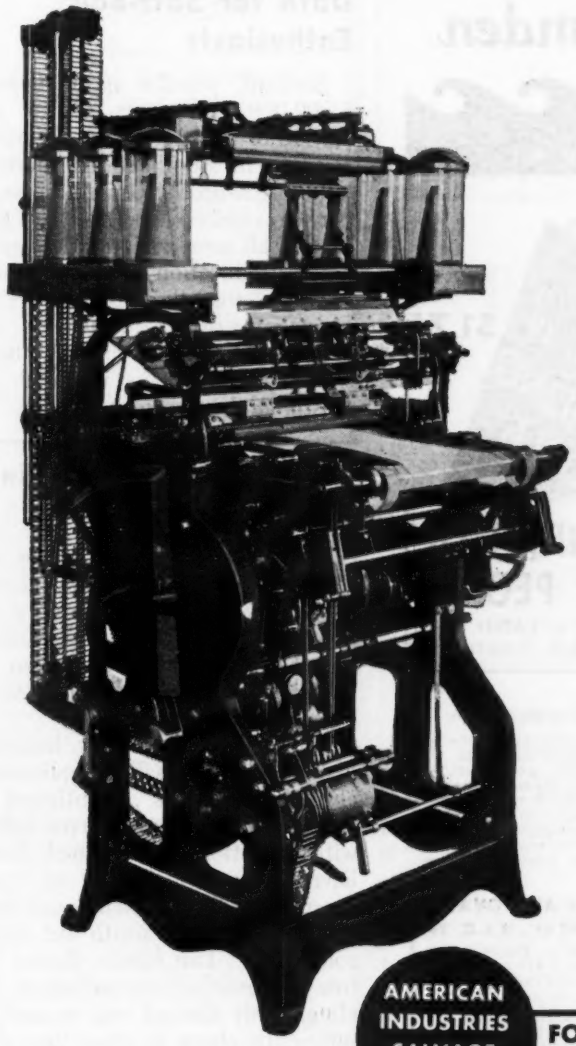
Among recent Army-Navy "E" awards are the following: Aragon Mills, Aragon, Ga. (third renewal); Stark Mills of United States Rubber Co., Hogansville, Ga.; Goodyear Clearwater Mill No. 1, Cedartown, Ga.; Goodyear Clearwater Mill No. 2, Rockmart, Ga.

Cone Overseers Get Course on Job Instruction

Two hundred and eighty-four employees of Cone group of mills in Greensboro, N. C., have recently completed courses in job instructions and are already using the knowledge gained on their respective jobs. Training sessions were attended by all overseers and second hands. Employees in each department were then selected to learn J. I. methods to be used in training new employees and in training old employees on new operations.

Job Instructor Training is part the program of WMC to help essential industries solve some of their wartime problems in supervision and train-

Cottons, synthetics and combinations in post-war stockings will create a lot of trouble for some hosiery mills. These yarns, especially in the fine gauges necessary to meet the insistent demand for sheerness, greatly increase the difficulty of transferring from leggers to footers, causing a high percentage of seconds through bad matching and lack of uniformity. They represent no problem, however, to mills using the



WILDMAN SINGLE-HEAD
Single-Unit, Full-Fashioned
HOSIERY MACHINE*

which perfectly handles all the silk substitutes in even the finest gauges. And, because it knits the entire stocking from top to toe in

ONE CONTINUOUS OPERATION

there is never a problem of matching. It's the machine of the hour.

* *Because of war work, our production for civilian purposes is limited to supplying repair parts.*

WILDMAN
MFG. CO., NORRISTOWN, PA.

AMERICAN INDUSTRIES SALVAGE PROGRAM

FOR AMERICA—THROW YOUR SCRAP INTO THE FIGHT

Fits Army

Fabrics for Global War...

Fabrics that must meet the rigors of today's world-wide war, need every good characteristic that you can impart.

DRUMMOND SOAP

Gives fabrics a good start on their career for Army, Navy or civilian use. For DRUMMOND Soap contains no filler of any kind . . . It's a high-body product of low alkali content . . . It has a high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for a free working sample and test DRUMMOND Soap on your own goods.

Don't Sell America Short — BUY MORE BONDS

Standard Soap Co. of Camden

205 South 2nd St
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

Do people like you *instinctively?*

$1.75

Do you know how easy it is to exercise the qualities that impress people favorably, that lead them instinctively to give that extra ounce of loyalty, cooperation, and effort to your ideas and orders?

To win the rewards that beckon to leadership today, in all walks of life, you *must work with people*—get them to like you—get over your ideas to them—influence their thoughts and actions. And now a plain method of developing this ability—11 simple rules that successful business leaders follow—things that *you can start doing today, without study or practice*—are given in this new book.

THE TECHNIQUE OF HANDLING PEOPLE

By DONALD A. LAIRD
and ELEANOR C. LAIRD

Read what—

EUGENE G. GRACE, who became president of Bethlehem Steel at thirty-seven, says about observation;

WALTER A. GIFFORD, who became president of A. T. & T. at forty, says about listening to opinions;

CHARLES E. WILSON, self-made president of General Electric, says about wanting to get ahead;

WALTER D. FULLER, who advanced from selling copies of the *Saturday Evening Post* to presidency of the Curtis Publishing Co., says about Big Ideas to get ahead;

LOUIS RUTHENBURG, who became president of Servel at forty-six, says about the spirit of work.

The observations of these and many other important men of industry lend concrete evidence to back up the soundness of Dr. Laird's book. The book gives seasoned, practical advice on the technique of handling people and shows in quickly understandable fashion how to use the psychology of leadership.

How to understand and work with others

This readable, practical manual presents 11 pointers on what to do and say in your everyday contacts with others, in order to win their friendship, good-will, and cooperation. The methods are clearly demonstrated in numerous stories of real people, outstanding leaders, of today, and together form a direct, easy-to-understand, easy-to-use technique for improving your relations with others and especially for securing better results in training, directing, supervising, and other elements of successful leadership.

"ASK TO SEE IT 10 DAYS ON APPROVAL"
McGRAW-HILL BOOK CO., 330 W. 42 St., N.Y.C. 18

Send me Laird's The Technique of Handling People for 10 days' examination on approval. In 10 days I will send $1.75, plus few cents postage, or return book postpaid. (Postage paid on cash orders.)

Name .....
Address .....
City and State .....
Position .....
Company FTW-7-44
(Books sent on approval in U. S. and Canada only)

ing, to get new workers trained thoroughly, and to help train old workers for advancement.

Training sessions comprised ten hours and there were about 10 persons in each group.

Orienting the New Worker

One important factor in good morale is the orientation of the new employee, according to a new report, "Orienting the New Worker," prepared by the Policyholders' Service Bureau of the Metropolitan Life Insurance Co., New York. This is especially true during wartime when great numbers of workers are entering new occupations—many of them women who have never worked before. An employee's first impression of the company he is to work for is important, and this report studies ways and means of making him feel at ease.

Data for Soft-Ball Enthusiasts

Softball, popular sport played by 5,000,000 Americans and a useful feature of physical-fitness programs, is featured in an illustrated sports bulletin just issued by United States Rubber Co. and offered free of charge to softball coaches, athletic directors, physical education instructors and individual softball players. Fundamentals for successful pitching, catching, batting, base running, infielding and outfielding are included, each illustrated by movie sequences.

Describes Advances in Blanket Technology

"With the development of rayon fiber came the first really designed blankets," stated Robert Amory, president of Nashua Mfg. Co., before a recent meeting of the American Association of Textile Technologists June 7 in New York.

"Many of the things learned in blankets are equally applicable to clothing materials", continued Mr. Amory. Clothing must have lightness with insulation, he explained. It must have the proper amount of opacity, except for stage garments and drapes. It must let body warmth out, but not cold air in. The fabrics should be as free as possible from soiling or wrinkling, easily cleaned and pressed, and sufficiently elastic to retain their shape. The fabrics must be light, but not too light, because a certain amount of weight gives the illusion of warmth—even if it be only an illusion.

DID YOU KNOW?

NATIONAL

supplies large quantities of

ADHESIVES & STARCH PRODUCTS

for sizing uniform fabrics, signal flags, etc.

for seating torpedo valves, packaging optical devices for observation and fire control, etc.

for sealing Secret Orders envelopes, splicing blueprints, binding manuals, etc.

for making flares, packaging Life Raft and Bail Out Rations, etc.

for forming and sealing Humidity Indicators used in protective packaging of motors, guns, etc.

for sizing Balloon Cloth & Trainer Plane wing fabrics

for forming and sealing Dye Envelopes (aid to rescue work)

for posting naval practice targets, mounting maps, etc.

for adhering luminous markers to ship decks and superstructures

&

for many other purposes important to naval training and operations and vital to Navy personnel.

No. 4 of a series

THE UNITED STATES NAVY

. . . Champion of the right

. . . Guardian of our shores

. . . Nemesis of the foe

. . . Avenger of treachery

THE U. S. NAVY floats, flies, submerges and lands. You will find America's finest in action on, above and below the troubled surface of the globe . . . meting out justice in formidable doses . . . clipping the tentacles of unwarranted aggression . . . striking at the very vitals of enemy resistance . . . writing new, more glorious chapters in the annals of naval history.

With mighty arms in all seven seas and on all five continents, the problem of supplying food, clothing, ammunition, repair parts and equipment to the many divisions of the Navy is stupendous, yet efficiently administered by a compact procurement organization.

Our responsibility is to formulate and produce reliable adhesives and starch products for such requirements as those shown at the left. How well we do our job is a matter of record with the Navy Department and with war industries everywhere.

Buy More War Bonds!

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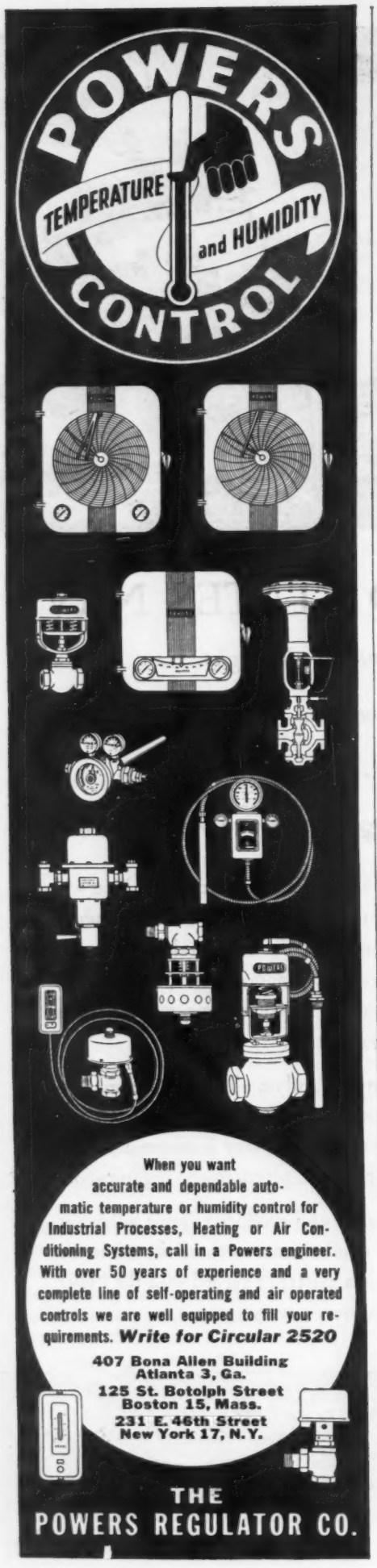
PLAINFIELD, N. J. . PHILADELPHIA, PA. . BOSTON, MASS. . CHICAGO, ILL. . INDIANAPOLIS, IND. . SAN FRANCISCO, CAL.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TEMPERATURE and HUMIDITY
CONTROL
When you want accurate and dependable automatic temperature or humidity control for Industrial Processes, Heating or Air Conditioning Systems, call in a Powers engineer. With over 50 years of experience and a very complete line of self-operating and air operated controls we are well equipped to fill your requirements. Write for Circular 2520
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THE
POWERS REGULATOR CO.

Book Reviews

An Encyclopedia of Cotton Information

COTTON FROM RAW MATERIAL TO FINISHED PRODUCT, Third Edition; Cotton-Textile Institute, Inc., 320 Broadway, New York 7, $1.20.

Chapters dealing with the wartime and peacetime uses of cotton and the future of the industry feature the third edition of this book which has just been published, and represents a revision of the first two editions. Subjects dealt with at considerable length comprise the history of the industry, the qualities and characteristics of raw cotton fiber, the spinning, weaving and finishing of cotton cloth, the variety of products produced by cotton mills together with a list of major uses of each staple fabric.

Tax Revision to Achieve Higher Production

PRODUCTION, JOBS AND TAXES; by Harold M. Groves; McGraw-Hill Book Co., 330 W. 42nd St., New York 18; 116 pages; $1.25.

This study of a postwar federal tax policy is the first in a series of research studies sponsored by the Committee for Economic Development, to provide factual information in the battle against mass unemployment. The role that federal taxation can play in achieving higher levels of production and in creating job-opportunities is well covered.

A Dictionary for Chemists

HACKH-GRANT CHEMICAL DICTIONARY; by Julius Grant; The Blakiston Co., 1012 Walnut St., Philadelphia 5; 925 pages; Third Edition; $12.00.

This dictionary contains more than 57,000 terms generally used in chemistry, physics, biology, engineering, and in other related sciences. While the work is that of an English author, special care has been taken to balance the treatment between the American and the British points of view. Numerous original tables and illustrations are contained.

Cotton Statistics

COTTON YEARBOOK OF THE NEW YORK COTTON EXCHANGE—1943; New York Cotton Exchange, 60 Beaver Street, New York; 112 pages.

The 16th Cotton Yearbook issued by the New York Cotton Exchange contains statistical data, as still available, extended to cover the 1942-1943 cotton season. Data covered includes cotton production, movement, consumption, stocks, supply and distribution, prices of cotton, yarn and cloth, etc.

Properties of Soybeans

SOYBEAN CHEMISTRY AND TECHNOLOGY; by Klare S. Markley and Warren H. Goss; Chemical Publishing Co., 26 Court Street, Brooklyn 2, New York; 261 pages; $3.50.

This book is divided into two sections, part one covering the chemical properties of soybeans and part two dealing with the processing of soybeans into oil and foods. Textile chemists may find material covered in the first part of this book useful when handling and processing soybean fibers.

Other Publications of Interest to Textile Men

INDEX TO A.S.T.M. STANDARDS; American Society for Testing Materials, 260 South Broad St., Philadelphia 2; 225 pages.

SAFETY IN ELECTRIC AND GAS WELDING AND CUTTING OPERATIONS; The American Standards Assn., 29 W. 39th St., New York 18; 32 pages; 40¢.

PRINCIPLES OF DRESS DESIGN; by William H. Hulme; The Maker-Up, 110 Fleet St., London, E.C. 4, Eng.; 30 pages; 5 shillings.

PRACTICAL PENSION PLANNING; N. Y. Journal of Commerce, 63 Park Row, New York 15; 35¢.

ASPECTS OF THE TEXTILE INDUSTRY IN BRAZIL; by Luiz Dodsworth Martins; Latin American Economic Institute, 90 Morningside Drive, New York; 31 pages; 75¢.

FINANCING INVENTORY ON FIELD WAREHOUSE RECEIPTS, by Jacoby and Saulnier National Bureau of Economic Research, New York; 89 pp. $1.50.

Can You use these Hooker Chemicals to meet Shortages?

Here are four Hooker chemicals that some dye chemists are finding very helpful in these days of shortages. Perhaps they can find a place in your production program and relieve you of some of your worries. All are available in quantity and you can use them with full assurance that they are not likely to become critical. A request on your letterhead will bring samples of any Hooker chemical.

Metanitrobenzoyl Chloride, $C_6H_4NO_2COCl$, a yellow to brown liquid partially crystallized. It is a mixture of isomers, mostly meta. It is soluble in ether and reacts with water and alcohol. Boiling range at 760 mm. is 275°C to 278°C; at 18 mm. is 154°C to 155°C. Last crystal point 28°C to 31°C.

Shipped in aluminum cans containing 70 lbs. and ternplate pails containing 50 lbs.

Paranitrobenzoyl Chloride, $C_6H_4NO_2COCl$, a yellow crystalline lump material with characteristic odor. It is soluble in ether and decomposes in water and alcohol. It contains 95% min. of Paranitrobenzoyl Chloride by weight. Minimum melting point 70°C. Boiling range at 15 mm. 150°C to 152°C; at 105 mm. is 202°C to 205°C.

Shipped in 5 gallon wide mouth glass bottles containing 37 lbs.

2:5 Dichlor Aniline, (1-Amino-2, 5-Dichlorbenzene), $C_6H_3Cl_2NH_2$, a brown crystalline solid, soluble in alcohol and ether and slightly soluble in water. It has a minimum melting point of 48°C.

Shipped in fibre drums containing 225 lbs.

Chlor Anisidine, (1-Methoxy-2-Amino-4-Chlorbenzene), $NH_2C_6H_3ClOCH_3$, a gray crystalline solid soluble in alcohol and ether and insoluble in water. Melting point 79°C or higher.

Shipped in fibre drums containing 200 lbs.

Other Hooker chemicals used extensively in dyeing and textile industry include:

Catalysts

Aluminum Chloride, Anhydrous
Antimony Trichloride, Anhydrous

Dye Manufacture and Intermediates

Benzal Chloride
Benzoyl Chloride
Benzyl Chloride
Benzotrichloride
Monochlorbenzene
Monochlortoluene
Orthodichlorbenzene
Phosgene

Chlorinating Agents

Sulfuryl Chloride
Thionyl Chloride

Write for the complete list of Hooker chemicals, among which you may find those that are the answers to your particular problems.

HOOKER
ELECTROCHEMICAL COMPANY
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Niagara Falls, N. Y.

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TACOMA, WASH.
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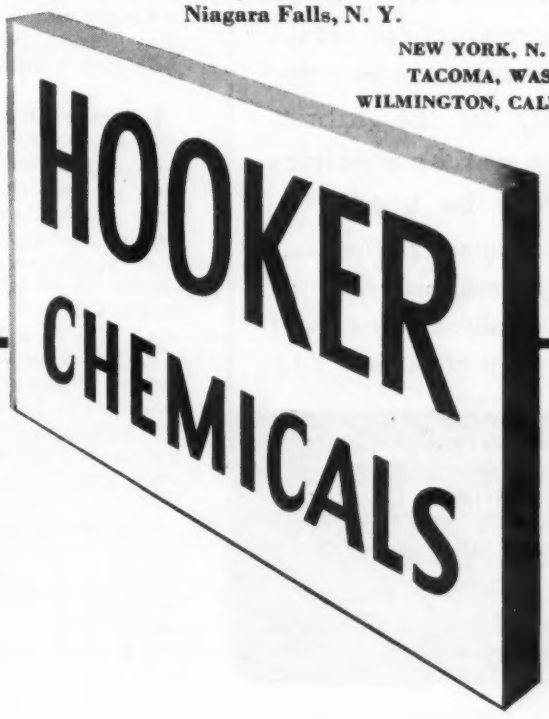

ARMY E NAVY

CAUSTIC SODA — LIQUID CHLORINE
MURIATIC ACID — PARADICHLORBENZENE
SODIUM SULFHYDRATE — SODIUM SULFIDE

Gas Infra-Red Drying Electricity

• Pioneers in the development of radiant heat in the Textile Industry, CARBOMATIC installations are successfully drying all types of fabrics and finishes in mills throughout the United States and Canada. These are working as completely automatic drying units, on palmers, tenters, loop dryers, slashers and singers or as auxiliaries.

CARBOMATIC jobs are guaranteed to speed up production, cut costs and improve the quality of the fabric. **Either gas or electricity may be used.**

Let our engineers solve your drying problems. Tell us your conditions and send for a copy of Bulletin T-12.

INFRA-RED DIVISION
CARBOMATIC CORPORATION
1775 BROADWAY, NEW YORK 19, N. Y.
Also H. W. Butterworth & Sons Co., Phila., Pa.
In CANADA: Canadian Textile Engrg. Ltd.
980 St. Antoine St., Montreal, P. Q.

Free FOR THE ASKING — MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies by using time-saving coupon below. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y., being sure to give your name and company connection.

1. "Lubricating Greases," is the title of a 28-page booklet being issued by Sinclair Refining Co. and covers the various types of highly specialized greases being produced for many industrial purposes.

2. Engineering data covering various types of high-speed chain drives and data covering roller chains, flexible couplings and free-wheeling clutches have been compiled in Bulletin 43 by Morse Chain Co. Aside from this engineering data, the bulletin contains the usual specifications and price lists which makes the catalog helpful to textile engineers and purchasing agents.

3. Fundamentals and applications of electronic controls are discussed in bulletin GEA-4126, being offered by General Electric Co. This publication explains in clear, simplified language the fundamental principles of electronic tubes and their operation.

4. "Spectrophotometry, and the Colorist," is the title of Calco technical bulletin No. 756 recently issued by the Calco Chemical Division, American Cyanamid Co. This bulletin points out how the spectrophotometer may be used by the plant chemist and suggests twelve mill-production research problems.

5. Textile mill men will be interested in photographs showing the production of tire yarns and fabrics for fuel cells, and also showing long-draft spinning, and high-speed spooling and warping, which are featured in an article appearing in the May issue of Oilways, published by Standard Oil Co. of N. J., Pa., La., and Colonial Beacon Oil Co.

6. "Ideas for Postwar Production," is the title of an article appearing in the May issue of *The Swirling Column*, published by The American Mono-Rail Co. Various types of overhead equipment are illustrated and described in this article.

7. Monel equipment used in the manufacture of dyestuffs is illustrated and described in an article entitled, "Guarding the Colors of the Chemical Rainbow," appearing in Vol. 8, No. 1, of *Process Industries Quarterly*, published by The International Nickel Co.

8. "Plasticized Materials," is the title of an article appearing in *Crane Valve World* for May, published by Crane Co. This article deals with the chemical industry's answer to shortages in cotton, wool, metals and wood. The development of numerous plastics that are replacing natural fibers is covered and interesting postwar possibilities for these plastics and for those combined with natural fibers are presented.

9. "Fundamentals of Water Cooling," is the title of a 38-page booklet published by The Marley Co., Inc. This booklet is intended to provide industrial users of water cooling equipment with a better understanding of the engineering principles involved. The selection, application, operation and maintenance of each type of water cooling equipment, along with flow diagram illustrating various types of cooling installations are shown.

10. Textile chemists and finishers will be interested in reading a reprint of a paper presented by J. Andrew Clark before the American Association of Textile Chemists and Colorists, titled "Ceglin Finish for Textiles" which was recently issued by the Sylvania Industrial Corp. Recent developments concerning the finishing with alkali soluble cellulose esters are discussed in this paper.

11. Precision lathes are illustrated and described in catalog No. 150 recently issued by South Bend Lathe Works. Various types of lathes and attachments and accessories are covered in the catalog.

12 "Amines," is the title of a booklet published by Carbide and Carbon Chemicals Corp., covering twenty-five members of this particular group of organic chemicals. The first part of the booklet contains the names, formulas, physical and chemical properties, etc. and the remaining portion of the booklet is devoted to graphical data covering various physical properties of these chemicals.

13. Safe lubrication of high-up bearings is discussed in a bulletin issued by The Farval Corp., entitled "Aloft Is No Place

It's costly to "RUB-OUT" processing mistakes!

WHY NOT AVOID THEM WITH OLATE?

When you're racing against time to meet unusually heavy production schedules, processing mistakes can be mighty costly. They waste time, manpower and materials.

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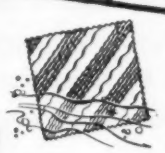

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for A.W.O.L. Bearings." This bulletin describes a system of lubricating bearings under pressure when they are in inaccessible places.

14. "The ABC of Luminescence," is the title of a 24-page booklet issued by The New Jersey Zinc Co., which discusses the characteristics, properties, limitations, and applications of inorganic luminescent pigments.

15. A Technical bulletin on Geon vinyl resins and plastics for calender and solution processing has just been announced by the Chemical Division of B. F. Goodrich Co. This bulletin contains information covering plasticizers and stabilizers used in combination with resins and lists typical formulations for the calender, and spread or dip processes.

16. "Valve Do's and Don'ts" is the title of a chart published by Reading-Pratt & Cady Division, American Chain & Cable Co. This 11- x 17-in. valve chart stresses the protection of valves and offers suggestions on how to increase valve life.

17. A high-speed tenter dryer is described in a folder published by Proctor & Schwartz, Inc. This folder illustrates the tenter dryer which is designed for handling woolen and worsted cloth, pile fabrics, felt, blanket cloth and other fabrics which must be held at full-width during the drying operation.

18. "Infra-Red from the Laboratory to the Production Line," is the title of a booklet published by Swenson Engineering Service. This booklet illustrates numerous infra-red drying installations and points out the advantages of the infra-red oven for drying.

19. Boiler feedwater treatment is discussed in a 20-page bulletin No. BFT, issued by Hungerford & Terry, Inc. This bulletin covers various methods and treatment such as zeolite, chemical precipitates, ion-exchange and other processes.

20. "Resin Adhesives," is the title of a 16-page booklet being offered by National Adhesives Division, National Starch Products, Inc. This booklet traces the development of synthetic resin adhesives, defines the trade terms and describes resin properties and procedures for handling various types of these products.

21. "The Coming Battle of Materials," is the title of a reprint being offered by Dohner & Lippincott. This reprint should be of interest to textile executives as it covers a number of postwar applications of textile fabrics in connection with industrial uses and their relationship to consumer acceptance.

22. "Lubricating Greases," is the title of a 28-page booklet being issued by Sinclair Refining Co. and covers the various types of highly specialized greases being produced for many industrial purposes.

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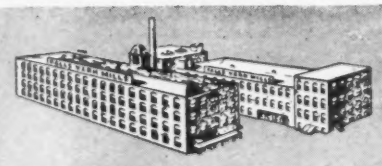

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News of the month

May Lift Machinery Ban. WPB is considering a plan to relax some of the controls on manufacture and delivery of textile machinery, permitting operation by machine manufacturers within the scope of available materials.

More Flexible Ceilings for Cottons. Under the revised OPA law, cotton goods ceilings are tied to cotton parity. In early July the revised figures (advances in most cases) were being calculated and issued.

Adopt Urgency Rating for Cotton Mills. Adoption of an urgency rating pattern for the cotton-textile industry, regulating production of all cotton fabrics, yarns, cordage and twines in the order of their importance to the war program and the civilian economy, was announced June 12 by WPB. Steadily increasing labor shortages have seriously curtailed production of many essential cotton-textile items, WPB said. Under the urgency rating pattern compiled by WPB, all cotton-textile mills are rated according to the essentiality of the item produced. The WMC manpower priority committee, using this pattern for guidance may channel such new labor as is recruited to those mills producing items most necessary to meeting military and civilian needs. Factors entering into the rating are broken down as follows: (1) the fundamental end-use importance of each item in the wartime economy, and (2) the adequacy of current production as measured against approved minimum essential requirements. Mills will be rated from 10 through 1, depending on the production urgency of the fabrics or yarns being manufactured.

AATCC Research Quarters. Laboratory facilities for its research program which had been offered the American Association of Textile Chemists & Colorists by the Lowell Textile Institute, Lowell, Mass., were inspected by the association's executive committee and a floor space of approximately 1,200 sq. ft. was approved. The association is now taking steps toward equipping it for contemplated research work. Fourteen specific research projects have been set up.

May Relax Rayon Allocation. WPB told members of the Hosiery Industry Advisory Committee at a meeting on June 13 that revocation of General Preference Order M-37-D, controlling production of rayon yarns for other than filling of rated orders, is under consideration. Revocation of the order, said the statement, would mean that the 17% of viscose or cuprammonium yarn and 6% of acetate rayon yarn, now set aside for the use of manufacturers of hosiery and other products as replacement for silk and nylon

"COTTON AT WAR", the motion picture released by the War Department on July 1, leaves no doubt in the minds of those who see it as to the vital importance of cotton fabrics in the military effort. Combat and training scenes show that practically everything that shoots, flies, floats, rolls or walks has cotton as an integral part and would be useless without it. Several scenes are presented with cotton components whitened out, and very little is left except the men's faces, helmets, and guns. The front cover of this issue features typical scenes. The purpose of the film is to drive home to the mill workers the fact that he and she are making prime necessities in the battle for victory and to encourage the workers in patriotic zeal to increase production. The Cotton-Textile Institute has cooperated in the preparation and distribution of the film.

The picture was described and the distributors listed on pages 172 and 174 of June, 1944, issue of TEXTILE WORLD. The War Department has made numerous copies of the film, and hopes that every man and woman who works in a cotton mill will witness its presentation within the next few weeks. Manufacturers are urged to arrange for a showing for their workers, if they have not already done so. For further information about the film they should communicate with the Motion Picture Branch, Industrial Services Division, Room 1315, 1501 Broadway, New York 18, New York.

Here's one manufacturer's experience. He encountered considerable static on acetate staple fiber and tried Stantex 629 by spraying acetate laps with a 1% watery emulsion. This resulted in increased production from his normal 38½-yard laps to 56 yard laps.

Before using Stantex 629 the laps were like a 'feather bed,' swelling up enormously and falling together in a lump on standing, making processing very difficult. When Stantex 629 was used, this manufacturer not only produced 56-yard laps but also saved considerable in labor and the breaking strength of the yarn increased from 64 pounds to 71 pounds. If you have a similar problem investigate the advantages offered by Santex 629. Samples are available upon request.

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Trucks made to order to fit your own ovens in capacities from 75 to 98 cakes. Polished brass arms hold and protect the yarn cakes. Strong easy rolling casters assure free movement of truck from oven to machines. What are your needs—Let us serve you.

Write for prices now.

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Manufacturers of Textile Mill Supplies

yarns would become a free material. The knitters feel that revocation of the order should await a more plentiful supply of yarns.

Research Coordination. Provision to avoid unnecessary duplication in textile research has been taken through the completion of the organization of the Inter-Society Council for Textile Research. Giles E. Hopkins, director of applied research of the Textile Research Institute, Inc., has been elected chairman and the following executive committee has been appointed: John T. Wigington, director of the Division of Technical Service of the Cotton-Textile Institute; Simon Williams, director of research for the National Cotton Council of America; Wm. D. Appel, chief of the Textile Section of the National Bureau of Standards; and R. W. Vose, secretary of the Industrial Fiber Society. Twelve research bodies are now members of the council.

Lowell Holds Commencement. Lowell Textile Institute, Lowell, Mass., held its 46th commencement on June 4. There were 18 candidates for bachelor's degrees, one for a master's degree, and two for diplomas. James A. McLean of Lowell received the annual NACM medal.

Markets Are Puzzling. Cotton goods selling for civilian use erratic with volume on decrease; sellers awaiting new OPA law clarification. . . . Wool goods should be more plentiful, but deliveries are still behind schedule. . . . Rayon situation tighter as buyers absorb all offerings. . . . Hosiery business steady. . . . Underwear scarcer as yarns and manpower get shorter in supply. . . . Outerwear pushing production to limit in most lines.

This & That. Col. Willard F. Rockwell, chairman of Timken-Detroit Axle Co. and other related firms, has announced a plan for war producers to withhold from profits before renegotiation sums up to one week's average wages for each month an employee has worked in the war plant up to 24 weeks wages for each employee of two years or more standing, the funds to be used if and when contract terminations and reconversions result in substantial unemployment, unexpended balances to revert to the government after two years from final settlement of terminated contracts. . . . Everfast Fabrics, Inc., New York, recently gave a televised style-show from the studios of Dumont Television Laboratories. . . . University of Pennsylvania, Philadelphia, is offering a three-day course in war contract termination, jointly with the procurement agencies of the government. . . . "Asbeston," a new asbestos-cotton yarn that is waterproof and only half as heavy as regular asbestos yarn, is being manufactured in the Hogansville, Ga., plant of the United States Rubber Co.

CONTROLLING COTTON FIBER

(*Continued from page 59*)

area. When the bales from which the technician has chosen his samples are put into process, he can easily follow the stock through the mill and determine the manufacturing qualities of it.

In the absence of standards with which to compare fiber-character tests, accumulated data will serve admirably as a basis of comparison. After a number of tests have been made and recorded, along with quality tests on the finished product, a standard for a particular mill can easily be established. It will then be only a routine matter to spot "poor-character" cotton and avoid costly hit-or-miss quality of manufacturing stock.

TESTS FOR CHARACTER. Data from the following character tests of fibers should give a good index of the spinning quality of cotton. All tests, except X-ray test, are carried out under standard atmospheric conditions of 65% r.h. and 70° F. with samples conditioned for 4 hr. in this atmosphere.

FIBER STRENGTH. The Pressley "flat-bundle" method, which is rapidly replacing the old Chandler "round-bundle" method, is made with the Pressley cotton-fiber strength tester. A small tuft is prepared from hand-mixed sliver; and from this tuft, small ribbons of fibers are drawn and combed, each ribbon being about ½-in. wide and containing roughly 1000 fibers. The strength index is obtained by dividing breaking load by weight of ribbon. The index usually varies from 5 or less to slightly over 10.

In view of the extensive data published on fiber strength using the Chandler "round-bundle" method, it is recommended that flat-bundle indexes be converted to round-bundle strength using the conversion formula as follows:

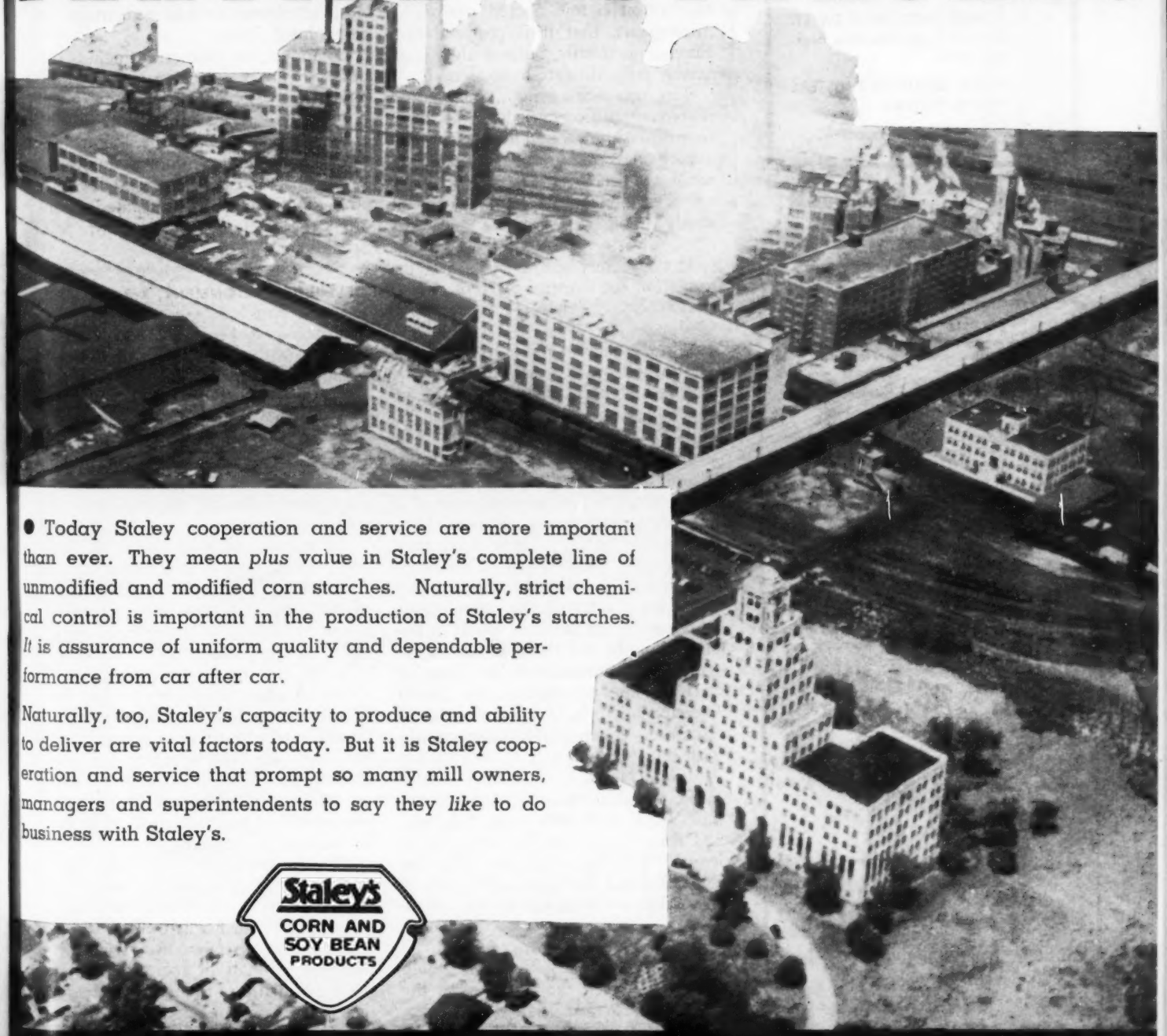
Estimated round-bundle strength (in thousand lb. per sq. in.) = 10.8116 × flat-bundle strength index − 0.1200.

Over a wide range of staple lengths, from very short upland cotton to extra-staple Sea Island, it has been found that the tensile strength of cotton fibers ranges from about 50,000 to about 110,000 lb. per sq. in. Based on regional variety tests, it may be said that 80,000 lb. per sq. in. is the average strength of American upland

A STAND OUT FOR MORE THAN 30 YEARS

STALEY'S

TEXTILE STARCHES



● Today Staley cooperation and service are more important than ever. They mean *plus* value in Staley's complete line of unmodified and modified corn starches. Naturally, strict chemical control is important in the production of Staley's starches. *It* is assurance of uniform quality and dependable performance from car after car.

Naturally, too, Staley's capacity to produce and ability to deliver are vital factors today. But it is Staley cooperation and service that prompt so many mill owners, managers and superintendents to say they *like* to do business with Staley's.

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CORN AND SOY BEAN PRODUCTS

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DECATUR ILLINOIS

Thinking yet about your Postwar

YARN THROWING MACHINES ? ? ? ?

You will profit by planning today to use, when the war is over, the improved yarn throwing machines of U. S. Textile Machine Co. Currently, Uncle Sam is getting our production efforts. But research and development is continuing on a large scale. And when peace comes, these will be available to you — offering *newest*, most modern features.

Plan to Use These Products

U. S. ACME TWISTERS for spool or headless package.

U. S. JUMBO FACE DRIVE TWISTERS for large Headless Package work.

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cotton; 85,000 lb. is very good. A strength of 70,000 or less would be poor. A difference of 3,000 lb. or more between the averages of ten breaks would be significant.

FINENESS TEST. Weight fineness of fibers, expressed in micrograms per inch, is calculated from the weight of 100 fibers pulled from each length group of a fiber array, and weighed. Fibers are taken from each individual length group, except the $\frac{3}{16}$-in. and $\frac{1}{16}$-in. groups and any other group having an insufficient number of fibers. The results of this test reflect the fineness of the fibers in a test specimen based on the average weight of one inch or one fiber. Most American cotton of normal maturity will fall between 3.5 and 6.0 micrograms. A value below about 4.0 micrograms indicates the cotton is fine fibered; above 5.2 micrograms, that it is coarse-fibered. Fineness is usually, but not always, inversely proportionate to the length.

The presence of neps, motes, and noils (immatured curled fibers) is determined simply by counting through a pick glass the number in a given weight of stock. A few grains of the test specimen before combing, spread thinly upon a board covered with black velvet or over a lighted box, will yield satisfactory results. (For more information see *Control of Neps, Naps, and Specks*, TEXTILE WORLD, Sept., 1943.)

The presence of natural oils can be determined by any convenient chemical method, such as that employed in de-sizing warp yarns or fabrics.

MICROSCOPIC TESTS. Determining the maturity, convolutions, and diameter of cotton fibers entails the use of a microscope with a magnification of approximately 400X. These tests may conveniently be thought of as three dimensional — maturity representing the width of cell wall, the convolutions representing the twists or spirals in the fiber's length, and the diameter representing the thickness of the fiber.

Under the microscope, the cotton fiber appears to be of a flat, ribbon-like structure. When treated (mercerized) with an 18% solution of sodium hydroxide (NaOH), the fiber swells. With a 400X magnification, a fiber appears thick or shadowed on each side, and thin or light in the center of its length. The thick edges are called the cell walls, and the thin hollow tube in the center is called the lumen, meaning passageway.

After years of experimentation, it was decided that a mature fiber would be one in which the thickness of the cell wall is greater than one-half the diameter of the lumen. By estimating —or, in questionable cases, measuring with a stage micrometer or an ocular micrometer—the wall thickness and lumen diameter of each fiber in a total count of 100 fibers taken from each length interval of the arrayed test specimen, the percent of mature fibers in the specimen can be determined.

Convolutions, or the lengthwise spirals found in cotton fibers, can be counted only by moving microscope slide about so that the entire length of the fiber passes the field of vision. There is no method of recording convolutions generally accepted which expresses the relation of the number of convolutions to a total test specimen. A satisfactory method would seem to be to count the convolutions in a given number of fibers, as 100 per length interval, and express the results as the number of convolutions per fiber of the test specimen, or the percentage of convoluted fibers.

Diameter, or geometric fineness, of fibers requires cutting a cross-section of a given weight of the test specimen. Since there is no uniformity in the cross-sectional shape of the fibers, both the major and the minor diameter of each fiber must be measured. The average diameter is calculated from these measurements for the entire test specimen.

CELLULOSE ALIGNMENT, X-RAY. The angle of the cellulose molecules has been found to be correlated with the strength of the undamaged fiber. The X-ray angle provides an indication of the probable strength of the fiber before the damage occurred. Fungi and light damage and conditions with respect to temperature and moisture during certain periods of growth have an important influence on the angle of cellulose alignment.

An average angle of about 34° has been found for a large number of American upland cottons. An angle of 32° indicates very good strength; below 31°, excellent strength; an angle of 38° or more indicates poor strength.

Tests are made by preparing a specimen the same way as for the Chandler bundle method, placing the bundle under tensions in a camera attached to an X-ray machine, and recording the X-ray diffraction pattern on a film. With the use of a microphotometer of special design, an angular measure is obtained.

The foregoing tests are all time-consuming, as compared to other textile tests; and to a technician unskilled in making them, his first efforts likely will be very discouraging. However, since the value of all fiber tests lies in the accumulation of data for comparative purposes, a long-range view must be taken.

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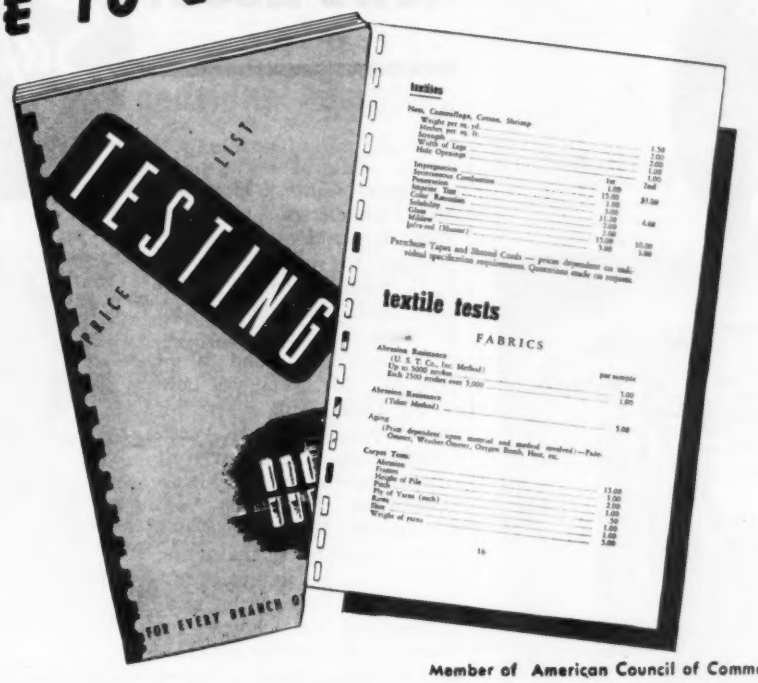

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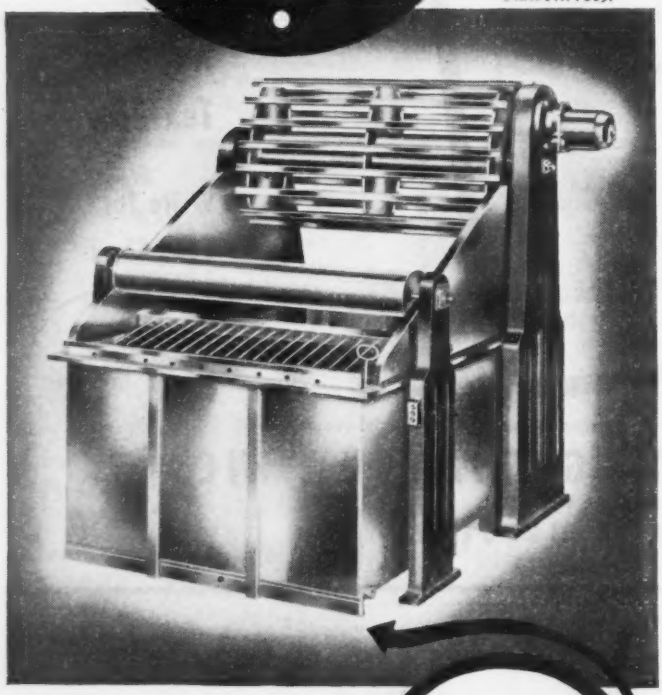
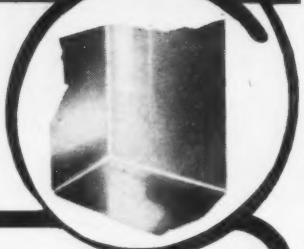


Stainless Steel Dye Boxes for dyeing woolens, worsted, cotton, rayon and mixtures. Plate No. 7019.



Round corner construction . . . no crevices into which old colors can step.

If war restrictions have forced you to "make do" with outworn dyeing equipment begin *now* to plan your *modern* post-war plant.

Look forward to dyeing equipment that is designed to give you perfect dye runs at lower cost. Look forward to level dyeing, to an end to discoloration, false shades, streaking, chaffing, spotting.

Blickman stainless steel dyeboxes and liftings, designed with round corner construction eliminate the crevices in which dyestuff residue accumulates – give you *more thorough cleaning with a quick rinse* than you can get with a *boil out* of other types of dyeing equipment.

Send for folder "3 for 5" for full description of how Blickman dyeboxes and linings will help you cut production costs.

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407 GREGORY AVENUE • WEEHAWKEN, N. J.

Specialists in Stainless Steel Textile Dyeing Equipment

NEWS ABOUT Suppliers

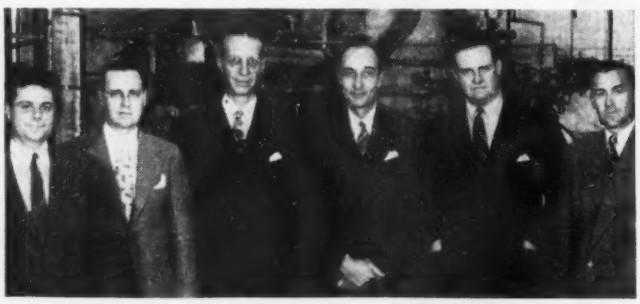
Draper Corp., Hopedale, Mass., has elected Thomas H. West as president of the corporation to succeed the late B. H. Bristow Draper. He has been with the company for 21 years, has been vice-president since 1938, and is 44 years old. Mr. West was born in St. Louis, Mo., where his grandfather, Thomas H. West, founded one of the first trust companies west of the Mississippi river. His father, also Thomas H. West, was also a banker, being president of the Rhode Island Hospital Trust Co. of Providence. After graduation from Massachusetts Institute of Technology in 1922, young West worked in Quinnebaug and Ponemah Mills for a year and entered the employ of Draper Corp. in the fall of 1923. After eight years in the selling department, he was made a director in 1931 and vice president in 1938.

THOMAS H. WEST, new president of Draper Corp., Hopedale, Mass., succeeding the late B. H. Bristow Draper.

Scott & Williams, Inc., Laconia, N. H., knitting machine manufacturers, now engaged in war production, report a net profit of $387,005, after taxes but subject to renegotiation, for the year ending Dec. 31, 1943.

Quaker Chemical Products Corp., Conshohocken, Pa., has added Eugene B. Martin to its staff of process engineers. Mr. Martin, who will service hosiery mills in Eastern Pennsylvania, has served as boss dyer with Colonial Knitting Mills, Philadelphia, for 13 years and as a consultant in the dye-house of Russell Mfg. Co., Middletown, Conn., for four years. He was a member of the dyestuffs department of E. I. du Pont de Nemours & Co. during the first seven years of that department's existence and was more recently employed by the Resinous Products Co., Philadelphia.

Dayton Rubber Mfg. Co., Dayton, Ohio, has appointed Harold P. Goller as sales representative in the middle Atlantic territory, with headquarters at 401 North Broad



WYANDOTTE CHEMICALS CORP., Wyandotte, Mich., has recently formed a Development Department, headed by J. J. Schaefer, which will handle the company's organic research program and the development of both organic and inorganic products. Mr. Schaefer was lately Director of Research for Sharples Chemicals, Inc. and was a vice president of that company since 1936. Wyandotte executives who recently inspected the organic pilot plant are shown. Left to right are Dr. W. F. Waldeck and Dr. Thomas Vaughn of research department; J. J. Schaefer, director of development and Lawrence D. Linke, his assistant; Howard F. Roderick, director of research, and Bert Cremers, vice president in charge of sales, Michigan Alkali Division of Wyandotte.

ONE MINUTE TALKS ON

Preparing Surfaces for 3-Dimensional Painting

If you are planning to do 3-Dimensional Painting to provide better visibility through contrasting colors of equipment and floor areas, one of the most important things to keep in mind BEFORE painting is that ALL surfaces to be painted should be completely free of oil, grease and dirt so as to assure a good paint coat and durable finish.

To do this work easier, more effectively, use one of the many Oakite specialized materials available that assure the CLEAN surfaces you require. Our nearby Technical Service Representative is waiting to bring you FREE, competent help on this important job. Why not call upon him . . . NOW?

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MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

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For the duration, our shops are principally engaged on war work.

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AND MAINTENANCE
CARD CLOTHING
NAPPER CLOTHING
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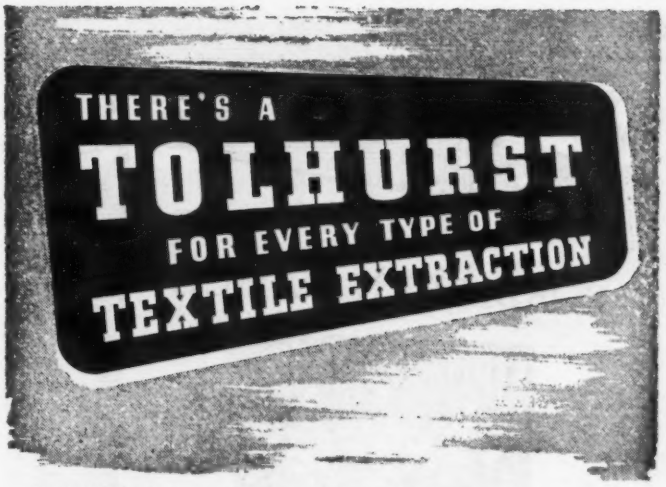
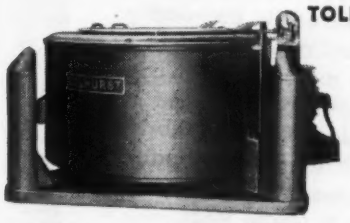
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD



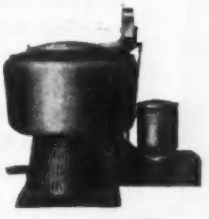
TOLHURSTS have proven themselves time and again the fastest, most efficient extractors in the textile field. For every need, for every material, the right Tolhurst will do it better and faster

TOLHURST "SUPREX"—For cotton raw stock this 48" extractor has proven its worth, in speed of extraction, economy and production. Smooth, efficient operation is assured by "SUPREX" suspension principle. Higher rotational speeds mean quicker and greater extraction. Timer control eliminates guessing when load is finished.



TOLHURST "CENTER-SLUNG"
Every feature of the "CENTER-SLUNG" has been designed to produce greater volume in shorter time. Unexcelled for underwear, tubing, hosiery and other fabrics. The exclusive center-of-gravity basket suspension enables this machine to handle unbalanced loads and assures smooth operation. Available in 40", 48" 60", 72" basket sizes.

TOLHURST "SOLID CURB"
Designed for rapid handling of small loads, the Tolhurst "SOLID CURB" Extractor is ideal for yarn, hosiery and other textiles. Motor drive. Basket sizes 20" and 30"



Write for detailed literature

ARMY E NAVY
Tolhurst CENTRIFUGAL DIVISION
AMERICAN MACHINE AND METALS, INC.
EAST MOLINE, ILLINOIS

THE ROLE OF CHEMISTRY In the Development of Textiles

NO. 4 OF A SERIES

FORBIDDEN CALICO

Glamorous Persanes — colorful Indiennes — these richly printed cotton fabrics from the East, intrigued French women of fashion in the middle of the eighteenth century. But the appearance of these printed cottons drew forth tortured cries of protest from the manufacturers of silk and wool.

In 1686, Claude Lepeletier, Comptroller General of Finance, prohibited the importation of printed goods and suppressed workshops in France making them from wood blocks with pigment dyes. As a result, the printing industry was scattered all over Europe and England.

In France, the laws against printed cotton only increased its popularity. In spite of the most rigorous edicts, it continued to be manufactured, continued to be imported, continued to be sold. The value of printed fabrics illegally manufactured or smuggled from abroad, amounted to sixteen million francs in a single year.

In 1759, the order suppressing cotton printing was repealed. And the industry started functioning legitimately on a large scale. Since then textile men have learned that improvements built into fibers and fabrics by textile chemists and colorists are likely to overcome all obstacles and go on to win acceptance from both the trade and the consumer.

BURKART-SCHIER CHEMICAL CO.

Manufacturing Chemists for the Textile Industry. In peace and war, our products are always on the job improving the finish of yarns and fabrics.

CHATTANOOGA, TENNESSEE

BURK SCHIER

PENETRANTS DETERGENTS SOFTENERS REPELLENTS FINISHES

NEWS ABOUT SUPPLIERS

Street, Philadelphia, Pa. Mr. Goller comes to Philadelphia from Greenville, S. C.

Sykes, Inc., the American subsidiary of Joseph Sykes Bros., Huddersfield, England, has named Walter Pratt, Charlotte, N. C., as president. For many years Mr. Pratt has been southern representative for Sykes, Inc., and since its formation has been an official of the firm.

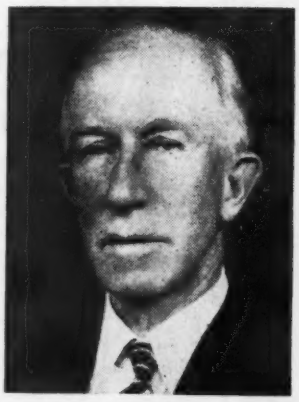
Puratized, Inc., New York, has retained Dr. C. N. Andersen, organic chemist and authority on germicides and antiseptics, engaged for the last 17 years in research work for Lever Brothers, as its research consultant. Puratized, Inc., is a subsidiary of the Gallowhur Chemical Corp. Dr. Andersen will specialize in the formulation of new compounds for the protection of fabrics and other materials from the attack of germs and mildew-forming fungi.

Colgate-Palmolive-Peet Co., New York, has elected J. A. Straka as a vice president and assistant to the president, working with soap industrial sales and advertising departments. The Colgate-Palmolive-Peet Co., New York, has appointed Marlowe Van Loan Corp., High Point, N. C., as distributor of its products to the textile trade in North and South Carolina and part of the state of Virginia.

Boston Woven Hose & Rubber Co., Boston, Mass., has named John H. Rowe, who for the last several years has been Chicago manager, as vice president in charge of western sales, covering the territory from Chicago to the Pacific Coast. On Aug. 1, Stuart A. Guild will become manager of the Chicago office. Mr. Guild has been in charge of the Connecticut, Rhode Island and Western Massachusetts territory.

Paisley Products, Inc., Chicago, Ill., Joseph Morningstar, president, have appointed Laurent J. LaBrie as technical director of their Chicago and New York plants.

Southern Friction Materials Co., Charlotte, N. C., has awarded contract for construction of an addition to its present plant to the Southeastern Construction Co. The company is now completing an addition to the treating department.



DR. JAMES EDWARD MILLS, chief chemist at Sonoco Products Co., of Hartsville, S. C., who was recipient of the Herty Medal in an appropriate ceremony on May 6, at Milledgeville, Ga. The Herty Medal is awarded annually for outstanding work in chemistry, in honor of the late Dr. Charles Herty, under whom Dr. Mills was a former student.

Conti Products Corp., Brooklyn, N. Y., has purchased the Draper Soap Co., Pawtucket, R. I. The line of Draper soaps will be actively continued and extended. G. Bradford Draper will be in charge of manufacturing. R. Donald Thompson will be the manager of Draper Soap Co. Division of Conti Products Corp.

Edward L. Bernays, New York, counsel on public relations, has just moved into their own five-story offices at 26 East 64th Street. Their partnership is the sole occupant of the old New York mansion at that address.

B. F. Sturtevant Co., Hyde Park, Boston, Mass., is celebrating this month the 75th anniversary of patent No. 92490 by B. F. Sturtevant

M. H. BAIRD who has been appointed by Beach Soap Co., Lawrence, Mass., as its representative in North and South Carolina.

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of Lasting Quality

We purchase steel under rigid specifications from a reliable source of supply. It is then manufactured into pins by our highly specialized machinery, after which it is hardened and tempered before assembly in lags. Thus we can guarantee you lags of *lasting Quality.*

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Are you confronted with one or more spinning or twisting problems? If you are, you may need the services of an expert ring traveler technician . . . a man who can diagnose your traveler troubles and prescribe the proper cure.

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H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

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Beams • Cheeses • Packages
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Replacement Parts for Existing Machines Can Be Furnished

Spinning Frames or Radiators?

Every active spinning frame is a radiator. The more and the faster it produces, the more heat it radiates. At times, this heat may equal that of a 10-branch steam pipe coil.

Modern textile machinery creates its own manufacturing handicap, on the one hand, and begs for the cure on the other.

With Certified Climate, anticipated production is not a disappointment, and installations pay for themselves sometimes in a year or less.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

who founded the company. This patent was granted July 13, 1869, and covers an air-blast apparatus associated with a heater or cooler. This patent, the company states, marks the beginning of the modern air-blast apparatus as applied to heating, ventilating and drying.

Glyco Products Co., Brooklyn, N. Y., has appointed Maurice S. Green, formerly of the National City Bank of New York, as comptroller.

Sam Tour & Co., New York, have moved their office and laboratories to their building at 44 Trinity Place.

JOHN L. GRAVES, who has been appointed manager of the Atlanta office of the Saco-Lowell Shops, as reported in these columns last month.

DR. PAUL EDGAR WILLIAMS, for the last 10 years director of Jefferson College, St. Louis, who has been appointed to head the expanded employee education program of Owens-Corning Fiberglas Corp., Toledo, Ohio.

Union Carbide & Chemical Corp., New York, has elected Fred H. Haggerson, vice president and director, succeeding Benjamin O'Shea who has been president since 1941 and now becomes chairman of the board. Union Carbide & Carbon Corp., New York, also reports election of presidents of subsidiary companies as follows: Dr. Joseph G. Davidson, president of Carbide & Carbon Chemicals Corp., and Carbide & Carbon Chemicals, Ltd.; James W. McLaughlin, president of Bakelite Corp.; Stanley B. Kirk, president of The Linde Air Products Co., The Prest-O-Lite Co., Inc., Dominion Oxygen Co., Ltd., and Prest-O-Lite Co. of Canada, Ltd.; Arthur V. Wilker, president of National Carbon Co., Inc., and Canadian National Carbon Co., Ltd.; Francis P. Gormely, president of Electro Metallurgical Co., Electro Metallurgical Co. of Canada, Ltd., Haynes Stellite Co., Michigan Northern Power Co., and Union Carbide Co. of Canada, Ltd.; John D. Swain, president of Electro Metallurgical Sales Corp.; John R. Van Fleet, president of United States Vanadium Corp.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.—Ernest Mahler, executive vice president of the Kimberly-Clark Corp., Neenah, Wis., has been elected

INDUSTRIAL GEAR CO., Chicago, Ill., was recently awarded the Army-Navy "E" award for excellence in production. Shown above at the ceremonies are Com. Wm. C. Butler, Jr., of Navy congratulating A. M. Scharek, president of Industrial.. In center are John A. Sizer, vice president of the company, and Lieut. Col. R. H. Place who represented the Army.

The Fleet Line

OF FINISHING EQUIPMENT

Fulling Mills • Washers — Batch and Continuous • Derby Dry Cleaners • Piece Dye Kettles • Stock Dye Kettles • Carbonizing Ranges • Dye Becks • Rope Soapers • Soaping Machines • Pusher Mills • Soap Distributing Systems • Top Dyeing Machines • Progressive Jigs • Yarn Steamers

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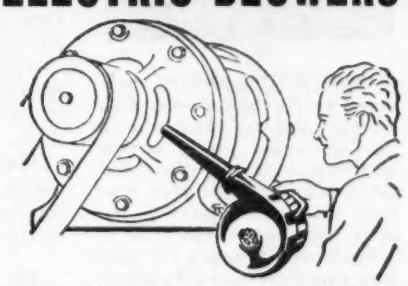
PROTECT MOTORS— REDUCE RE-PLACEMENTS— CUT POWER COSTS



PREVENT motor burnouts, overheating and shutdowns. Keep motors and machinery clean. Blow out dust, dirt, lint, chips, etc. with the powerful, portable TORNADO Electric Blower. Quickly pays for itself in cutting repair and replacement costs.

Write for details and FREE Trial Offer

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NEW BEDFORD, MASS. ALLEN COMPANY.

CONSERVE YOUR BEAMS! when CUTTING WASTE DON'T CUT BARREL

ALLEN COMPANY, 136 River Road New Bedford, Mass.—So. Rep. Mr. L. E. Wooten, Fort Mill, So. Car.

6

ARE YOUR EMPLOYEES SKATING IN OIL?

End the danger quickly with *SPEEDI-DRI*

A BLEEDING, oil-soaked floor makes a great skating-rink, but it's dangerous to life and limb, it slows production, and it's a serious fire-hazard. SPEEDI-DRI is your best answer. This light-reflecting, granular, oil- and grease-absorbent acts as a poultice for sick, slick floors, soaking up fresh oil rapidly and even drawing out old deposits from around carding, spinning, roving, warping, sloshing, and weaving equipment. The minute it's spread, it provides a non-skid footing that prevents many a slipping accident. What's more, it's fire-retardant! Easily spread and cleaned-up without interrupting production, it saves hours of porter-labor. SPEEDI-DRI has *many* other uses in industry, too. Write for literature and FREE SAMPLE—today!

SUPPLIERS: East—Refiners Lubricating Co., New York 1, New York.
Midwest & South—Waverly Petroleum Products Co., Philadelphia 6, Pa.
West—Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

SPEEDI-DRI

OIL AND GREASE ABSORBENT

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AN INDUSTRIAL TOOL OF GREAT EFFICIENCY for Baking • Drying • Dehydrating and Preheating Operations

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A typical example of increased drying efficiency obtained by Infrared in textile plants is the installation pictured above. A Fostoria Infrared unit, requiring only 24 K W, is mounted above the travel of cloth directly before entering the conventional steam dryer. The result is a 40% production increase in the drying of 32 ounce woolen material.

Description and case studies of Fostoria Infrared installations in various textile plant operations are available for your information. Request these facts on Infrared advantages, today. They point the way to quick solution of your drying problems.

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Fostoria Industrial Service Centers, located in major cities, have complete laboratory facilities to test and pre-determine the specific advantages of Infrared in your baking, drying, dehydrating or preheating operations. This service is offered without obligation. Write, now, for full information.

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FOR BAKING • DRYING • PREHEATING • DEHYDRATING

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to the board of directors of Allis-Chalmers, succeeding R. G. Hutchins, New York, who retired after 31 years of service on the board.

The B. F. Goodrich Co., Chemical Division, is increasing production of its Geon vinyl chloride resins by an expansion of its chemical plant in Louisville, Ky., scheduled for completion early in 1945. The plant expansion was requested by WPB.

Wickwire Spencer Steel Co., New York has promoted B. L. McCarthy to the position of assistant general superintendent of the Buffalo Plant. C. A. Gordon has been named superintendent of Hot Departments at the Buffalo Plant.

"THE HERCULES MIXER", published by Hercules Powder Co., has been awarded third prize in the nationwide cover contest sponsored by the American Red Cross to promote the 1944 War Fund Campaign. Above is the cover which was ranked third in competition with nearly 200 company magazines from all parts of the nation.

Babcock & Wilcox Tube Co., New York, has added Marcel A. Cordovi, formerly research assistant in Welding Research Council of the Engineering Foundation, to its metallurgical staff as research metallurgist.

The Carborundum Co., Niagara Falls, N. Y., has opened three new branch sales offices at Buffalo, N. Y., St. Louis, Mo., and San Francisco, Calif. G. S. Rogers is in charge of the Buffalo office, Gordon O. Watson at St. Louis and W. T. McCargo at San Francisco.

Norma-Hoffman Bearings Corp., Stamford, Conn.—Harold J. Ritter has resigned as vice president and a director of Norma-Hoffman after 28 years with the company. Mr. Ritter's future plans have not been announced.

GILBERT H. CORBIN, formerly field sales manager of the Laundry & Dry Cleaning Division, of Pennsylvania Salt Mfg. Co., Philadelphia, who has been made district sales manager in charge of the company's Minneapolis office. Mr. Corbin has been associated with the Company's Laundry & Dry Cleaning Division since it was established in 1940, following the purchase of the Sterling Products Co. He had been with the latter company for about 13 years.

Spencer Lens Co., Buffalo, N. Y., has elected the following slate of officers: Heywood Fox, president; Harold D. Rhynedance, vice-president in charge of sales; Walter G. Buckley, vice-president in charge of manufacturing and chairman of the board; Bryant Glenny, treasurer and ass't. secretary; E. E. Williams, ass't. treasurer; Charles W. Barton, secretary.

The Austin Co., Cleveland, Ohio, has named J. K. Gannett, vice president of company and its eastern district manager since 1928, as director of engineering, in charge of engineering and research. He joined The Austin Co. as assistant chief engineer in the Cleveland district in 1915.

Votator Division of Girdler Corp. on May 1 opened a New York office at 150 Broadway with S. N. Welch as the eastern representative.

RECENT ARMY - NAVY "E" AWARDS: Third renewal to American Machine & Metals, Inc., East Moline, Ill.; first renewal to Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.; pennant to Saltville plant of The Mathieson Alkali Works.

ORDER YOUR
Cut Gears
Cut Sprockets
Cut Racks
from
"Industrial"

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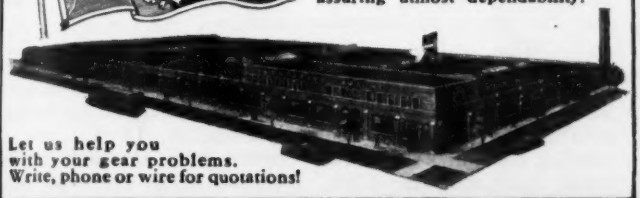
OUR new, modern plant is equipped with the most up-to-date machines and equipment for precision cutting of Gears, Racks and Sprockets of every description.

Every "Industrial" Gear, Sprocket or Rack is checked, inspected and gauged for accuracy at every stage of production, assuring utmost dependability.



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INDUSTRIAL GEAR MFG. CO.
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STOP dust from damaging finished fabrics or entering machines

Use "KEW BEE KUT" Sweeping Compound

It "magnetizes" the dust and lints, and holds it down while you sweep. Colored red or green, so sweeper can see the dust and . . . GET IT ALL. Vacuum cleaned of small particles. Safe to use. Price in barrels . . . 100-lb. $3; 200-lb. $5; 300-lb. $6; fob Brooklyn. No priorities needed, prompt shipment.

National Sawdust Co., Inc.
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BROOKLYN 11, NEW YORK

Camachine 24-2A converts fabric into rolls of strip at low cost.

CAMERON MACHINE COMPANY, 61 Poplar Street, Brooklyn 2, New York
MIDWEST OFFICE: Harris Trust Building, 111 West Monroe Street, Chicago 3

FRIEND OF THE PLANT OWNER... WHO HAS A WET SURFACE MAINTENANCE PROBLEM

The Damp-Tex system of painting kills rust, rot, fungus and bacteria. Stops deterioration. Can be applied on any paintable surface, *wet* or dry, with equal ease and efficiency . . . changing dingy, rough light-blotter interiors into glistening porcelain-like beauty. One coat covers. Resists acid, alkali, corrosive gases and oxidation. Dries overnight without flavor-tainting odor into waterproof film. Comes in white and colors.

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DAMP-TEX FOR
WET OR DRY SURFACES

STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

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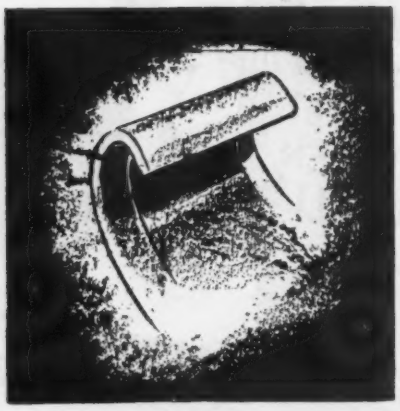
RING TRAVELERS



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Great pioneering "U. S." contributes to smooth spinning, twisting. Eliminating angular edges, gives uniformity of tension more even yarn, less "fly."

You never get a "spotty" Pot of Ring Travelers when you get "U. S." You always get the same uniform grade as the preceding batch. That is just one of the MANY reasons why mill men order and re-order them. How we accomplish this is a long story . . . suffice it to say that it will pay you to try U. S. if you have traveler troubles. You have? Tell us about them!

● Sold under these trade names

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Traveler
Bowen Patented No-Bow Vertical
Bowen Patented Vertical Offset

U.S. RING TRAVELER CO
AMOS M. BOWEN
President and Treasurer
PROVIDENCE RHODE ISLAND

NEWS ABOUT *Men*

Chester H. Roth, of Chester H. Roth Co., New York, has become president of the Standard Hosiery Mills near Burlington, N. C., succeeding the late John Shoffner. Mr. Roth has purchased a financial interest in these mills. **Duncan A. MacKenzie** was elected vice president and general manager, and **Herbert W. Wade** continues as secretary-treasurer. Mr. Roth stated that the management of the mill will remain unchanged.

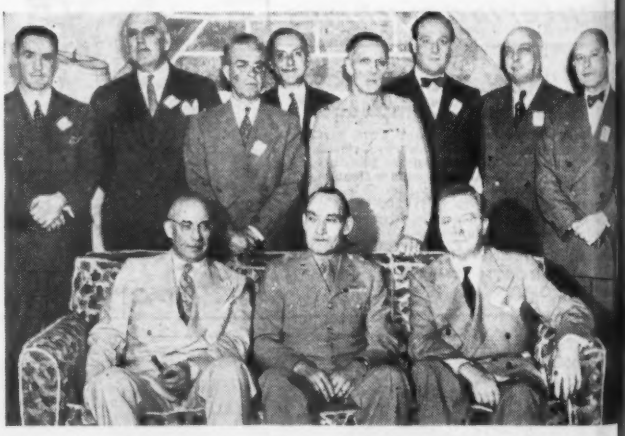
Samuel Y. Austin, president of Avondale Mills, Sylacauga, Ala., has been appointed a member of the government spending committee of the National Association of Manufacturers.

Walter K. Shaw, Jr., of E. A. Shaw & Co., Boston, has succeeded **Alfred Boedtker** as president of the Cotton Importers Association. **Elwood B. Kern, Jr.**, of the New York office of Geo. H. McFadden & Bro., was elected vice president of the association.

Hugh Comer, vice presiden of Avondale Mills, Sylacaug Ala., has been appointed to committee on administratio law formed by the Nationa Association of Manufacture to determine where delegatio of authority in governmen administration agencies shoul end.

Sam Bledsoe, veteran news paperman and former assistan to the Secretary of Agricultur Washington, D. C., has re signed from the staff of th United States News to hea the new Washington office o the National Cotton Council

Dr. Wm. P. Jacobs, Clin ton, S. C., was reelected ex ecutive vice president an treasurer of the Cotton Manu facturers' Association of Sout Carolina at its recent meetin Dr. Jacobs had planned to re tire from this position as re



THE 169th ANNIVERSARY of the founding of the Quartermaste Corps in Philadelphia in 1775, was marked by honoring represente tives of textile and clothing trade associations for their cooperatio in helping the Army fill its procurement requirements. Trade repre sentatives and Depot officers shown above are (seated, left to right) Dr. Claudius T. Murchison, president of Cotton-Textile Institute Brig. Gen. Roland Walsh, Commanding Philadelphia QM Depot and Edwin Wilkinson, of National Association of Wool Manufac turers. (Standing, left to right) Don Williamson, executive vice president of Southern Garment Manufacturers Association; C. K. Everett, Cotton-Textile Institute; Earl West, secretary of Underwea Institute; A. F. Allison, secretary of International Association of Gar ment Manufacturers; Col. Thomas W. Jones, Director of Procure ment, Philadelphia QM Depot; Harold Korzenik, counsel for Nationa Knitted Outerwear Association; Earl Constantino, president of Na tional Association of Hosiery Manufacturers; and Harry Reima editor, *Daily News Record*.

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DuraBeau
Reg. U. S. A. & Canada

Like exquisite and long remembered strains of a haunting refrain, drawn by a master's bow from the silent strings . . . Fibres and Fabrics spring to life and *lasting* loveliness when treated with *DuraBeau* Finishes . . . Acclaimed, and admired by the manufacturer, jobber, retailer and wearer for over 36 years.

SCHOLLER BROS., INC. Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila. 34, Pa. • St. Catharines, Ont., Can.

WE'VE LEARNED A LOT IN OUR 50 YEARS!

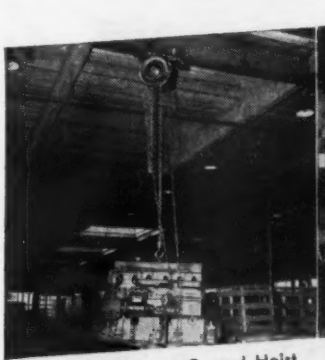
50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
Incorporated
2060 Brook St. Louisville, Ky.

Caldwell TANKS

COFFING HOISTS



Model "YC" Spur Geared Hoist Moving Large Truck Motor

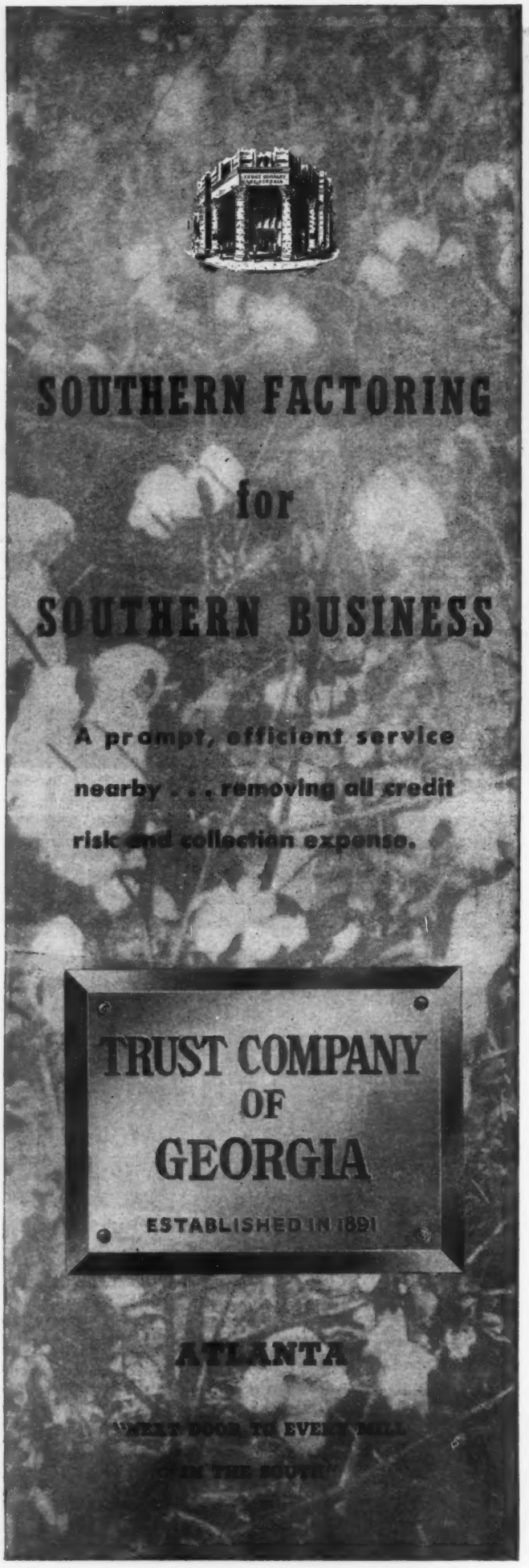
"Quik-Lift" Electric Hoist Speedily Moving Pipe

FOR SPEED
SAFETY
ECONOMY
DURABILITY

Coffing's "Quik-Lift" Electric and Model "YC" Spur Geared Chain Hoists are made to the same rigid specifications as the famous Coffing "Safety-Pull" Ratchet Lever Hoist. In practically all lines of industry Coffing Hoists are playing a prominent part in speeding up construction, production and maintenance.

Write Today for Catalog JG-6

COFFING HOIST COMPANY
Danville, Illinois, U. S. A.


SOUTHERN FACTORING
for
SOUTHERN BUSINESS
A prompt, efficient service nearby . . . removing all credit risk and collection expense.
TRUST COMPANY OF GEORGIA
ESTABLISHED IN 1891
ATLANTA

ported but was prevailed on to continue his services. He will be assisted in his work by **John K. Cauthen,** of Clinton, who was elected secretary.

Bernard J. Conlin has been elected president of the Wool Associates of the New York Cotton Exchange. **Albert W. Hilliard** is now first vice president, Lawrence P. Hills second vice president, and **Benedetto Lopinto,** treasurer. Mr. Conlin succeeds **Frank J. Knell.**

E. O. Fitzsimons has moved his headquarters from Charlotte to the Washington office of the Cotton-Textile Institute, to enable the institute to handle more effectively the greatly increased volume of its Washington duties. Mr. Fitzsimons has served as field representative of C.T.I. since September, 1933, and for the last eight years has also served as executive secretary of the Carded Yarn Association, with his office located in Charlotte. The Charlotte office will remain open, but its executive activities will be carried on in Washington.

George Fowler has retired as head of the colored goods section of the Textile, Clothing & Leather Bureau of WPB and returned to Cone Export & Commission Co., New York. He is succeeded at WPB by **George Greey.**

Chester E. Haring, former vice-president and director of marketing for Batten, Barton, Durstine & Osborn, New York, and previously market research director for Fuller & Smith & Ross Advertising Agency, has assumed active charge of the Postwar Marketing Research Project of the Committee for Economic Development. **T. G. MacGowan,** manager of the Marketing Research Department of Firestone Tire & Rubber Co., is chairman of the CED Marketing Committee.

Richard C. Remmey, for the last 15 years purchasing agent and assistant to the president of Mock, Judson, Voehringer, Inc., Greensboro, N. C., and **Nathaniel J. Newman,** of New York, for more than 15 years in charge of sales, were elected vice-presidents at a board meeting held in Greensboro.

John Alden Spooner has been appointed vice president

***DR. A. C. WHITFORD,** fiber technologist, who will head the newly established Department of Research at S. Stroock & Co. mills in Newburgh, N. Y. Dr. Whitford, who has just completed a scientific study of animal hair for Yale, joined the company in June. He spoke at the graduation exercises of the Straubenmuller Textile High School, New York, on June 29.*

in charge of public relations and advertising for Textron, Inc., New York.

Eugene P. Cofield, sales manager of Erlanger Mills, Lexington, N. C., has been elected vice president of the Lexington Rotary Club, and **Smith Crow,** superintendent of the same mills has been elected a member of the board of directors of the club.

John T. Shea has become an executive in the manufacturing department at P. H. Hanes Knitting Co., Winston-Salem, N. C. He was formerly vice president and general manager of Oneita Knitting Mills, Utica, N. Y.

J. Bruce McCullough, on leave as head of Avondale Mill's Philadelphia office, has been named to head the cotton yarn division of the Textile, Clothing and Leather Goods Bureau of WPB, succeeding **E. N. Brower** of Rockfish Mills.

R. P. Alexander, who is office manager at Slater & Sons, Inc., Slater, S. C., was elected president of the newly-organized chapter of the National Office Management As-

***STRAUBENMULLER TEXTILE HIGH SCHOOL,** New York, N. Y., Wm. H. Dooley, principal, is celebrating its 25th anniversary this fall. The school desires the names, business connections and addresses, and military service of all former men students of both the day and evening classes.*

COTTON

winning new Fashion Prestige!

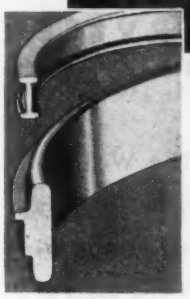
Advertisements monthly in leading fashion magazines are featuring cotton fashions, designed by famous designers, exclusively for the Governors' ladies of the New England States. These advertisements are a continuation of the series which have already covered many southern and midwestern states.

Following is a partial list of these famous designers, who are helping to build new fashion prestige for cotton:

Pins and Needle Shop
Santa Fe, New Mexico
Vera Maxwell
Maurice Rentner
Dorothy Cox of McMullen
Eta of Ren-Eta
Joset Walker
Renee of R.K.O. Pictures
Claire McCardell
Adele Simpson
Natalie Renke
Charles Armour
Deitsch, Wersba & Coppalo

NATIONAL COTTON COUNCIL ★ COTTON TEXTILE INSTITUTE

Photo Courtesy Pepperell Mfg. Co.



We make all types of holders

Modern rings permit frames to turn out more work

Spinning and twisting is bound to run better after replacing worn rings with new DIAMOND FINISH. From this alone, production gains often are suprisingly large. Rings are repairs — make the most of 'em!

WHITINSVILLE (MASS.)
SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

DANA WARP MILLS

Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT OFFICE & FOREIGN COUNTRIES

Keep Cards Producing Clean Stock

Quit using dripping, leaking oil that rots card clothing, soils stock and fails to lubricate dependably.

7 out of 10 mills get highest production of clean stock and keep cards in steady operation with drip-less, waste-less NON-FLUID OIL. Saves on oil bills too, outlasts oil many times.

New York & New Jersey Lubricant Co.
***Main Office:* 292 Madison Ave. New York 17, N. Y.**

THE OLDEST AND LARGEST
MANUFACTURER OF
Ring Spinning and Twister Travelers

NATIONAL RING TRAVELER CO. PROV. R.I.U.S.A.

In the UNITED STATES
American ● Hicks ● Wilson
United States Standard Wentworth Double Duty and Gravity Travelers
MAKE STRONGER YARN
National-Etartnep Finish
A New Chemical Treatment
Write Us
National Ring Traveler Company
354 Pine St., Pawtucket, R. I.
PHILIP C. WENTWORTH, *Treas.*
P.O. Box 1565, Providence, R. I., Charlotte, N. C.

THOS. WOLSTENHOLME SONS & CO. INC.
3300 Frankford Avenue
Philadelphia, Pa.

Yarns for all purposes

French and English Spun Worsted
French Spun Zephyr
French Spun Merino

Representatives:—

Mr. Robert H. Perkins
99 Chauncy St.
Boston 11, Mass.

Mr. C. F. Peffer
The Merchandise Mart.
Suite 1076
Chicago 54, Ill.

Mr. Arthur Bone
4436 Worth St.
Los Angeles 33, California

WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE
1852-1944

During 92 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS
LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.
LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS
NEW BEDFORD, MASS.

Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

WILLIAM WHITMAN COMPANY, INC.

SELLING AGENTS

BOSTON, 78 Chauncy St. NEW YORK, 261 Fifth Ave.
PHILADELPHIA, 1600 Arch St. CHARLOTTE, Commercial Bank Bldg.

sociation at Greenville, S. C. Other officers include **J. L. Whatley**, of the Dunean Mill vice president; **A. D. Robinson**, of Union Bleachery, treasurer, and **S. G. Bagwell**, of Brandon Corp., secretary. **John L. Smith**, of Brandon Corp., was elected a director. All of the officers except Mr. Alexander are from Greenville.

Karl W. V. Nix, sales agent for several mills serving the rubber industry, and **Harry L. Swain**, formerly fabric buyer of Firestone Tire & Rubber Co., have formed a partnership to represent industrial-fabric mills in Akron, O. The new company will be called Karl W. V. Nix Co. and will be located temporarily in the Akron Savings & Loan Bldg.

Arthur Pertsch, of the board of governors of the New York Cotton Exchange, New York, was recently reelected president of the North Sea Mine Force Association, which is comprised of veterans who shared in laying 70,000 mines in the North Sea in the summer of 1918. He wants to hear from all veterans of that branch of the service who partook in that enterprise. **E. W. Coyle**, of Merrimack Mfg. Co., New York, is now vice president of that association.

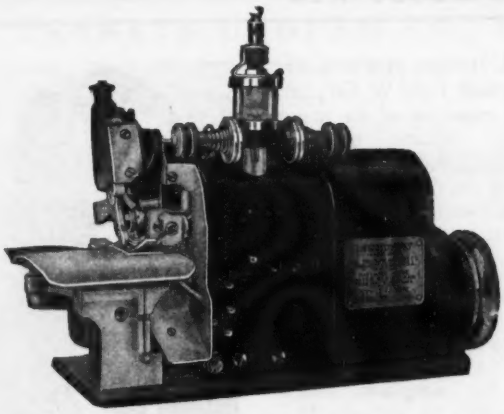
William F. Brosnan has been appointed manager of all finishing operations of Verney Mills, New York. He will have charge of the finishing plant at Verney Taunton Mills, Inc., Taunton, Mass., as well as the finishing plant of Verney Mills of Canada, Ltd., Granby, Quebec. In addition, under his supervision will come the finishing of all fabrics from the six mills now operating under the Verney Mills organization. Mr. Brosnan has recently resigned from F. P. Maupai Dyeing Co., West New York, N. J. Previous to that connection he was superintendent of dyeing and finishing with Farr Alpaca Co., Holyoke, Mass.

JOHN H. SCATTERTY, of Scatterty & Jones, New York, who has succeeded Eric Alliott as president of the New York Cotton Exchange.

Harry Baldwin has been appointed general manager of Verney Taunton Mills, Inc., Taunton, Mass., and the Verney Mills of Canada, Ltd., Granby, Quebec. Mr. Baldwin will make his headquarters at Taunton. For the last four years he has been general superintendent of Bloomsburg Mills, Inc., Lock Haven, Pa.

Frank T. Hayes, general manager of Liberty Hosiery Mills, Liberty, N. C., has resigned to go into business as a hosiery mill representative in New York.

VISITORS FROM BRAZIL—The Brazilian Textile Delegation consisting of manufacturers, representing both their national association and their national government, visited the United States in June. They were escorted on their travels through textile centers of this country by a representative of our Foreign Economic Administration. The chief purpose of their visit was to contribute a large share of their production to the United Nations' pool of textiles for foreign relief. Left to right: G. Thomas Hodges, textile engineer with Industrial Engineering Div., Engineering Service of FEA; Dr. A. Machado P. Miranda, managing director, CIA Confianca Ind.; Dr. E. Mascarenhas,, president of Comanhia Textile Bernardo Mascarenhas, and Dr. A. L. Menezes, president of CIA Confianca Ind.



Merrow Class A Machines, illustrated, have made possible quality production, high speed and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

MERROW HIGH SPEED

OVEREDGING, OVERSEAMING AND HEMMING MACHINES

Produce Federal Specification Stitch
Types 501, 502, 503, 504 and 505

WAR WORK DEMANDS

Quality Results — High Production
Convenient Handling
Minimum Time-Out for Adjustment
or Repair — Low Upkeep Costs

Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work—Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various War Work and Proper Care and Operation of Machine.

ESTABLISHED 1838 — INCORPORATED 1894

THE MERROW MACHINE COMPANY
STARTING ITS SECOND CENTURY

2803 LAUREL STREET — **HARTFORD 6, CONN., U. S. A.**

CRANE

KNITTING MACHINES
meet the need for Speed—
for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just **WRITE**

1870 **CRANE** 1944

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

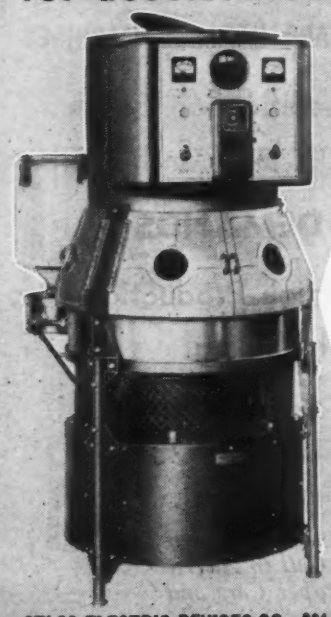
Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.
FRANKLIN, N. H.

FADE-OMETER

for accelerated color fading



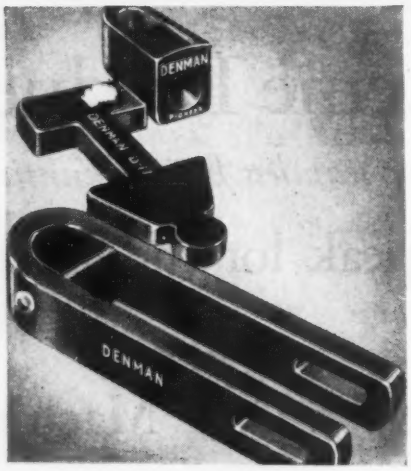
• Originated and made solely by Atlas. Used all over the world and accepted as the standard color testing machine by the textile industry for over a quarter of a century.

Specimens are rotated around the Atlas Enclosed Violet Carbon Arc—the closest approach to natural sunlight. Temperature automatically controlled. No loss of light intensity of arc during life of machine.

ATLAS ELECTRIC DEVICES CO., 361 W. Superior Street, Chicago, Ill.

ATLAS-OMETERS

WEATHER-OMETER ★ LAUNDER-OMETER ★ FADE-OMETER



DENMAN

PICKERS LUG STRAPS

HOLD-UPS

Lowest Cost Per Loom Per Year

The Terrell Machine Co., *Inc.*

CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . . Canada
Geo. Thomas & Co., Manchester, Eng. . . European Agent

NEWS ABOUT MEN

L. H. Hodges, vice president of Marshall Field & Co., and general manager of its manufacturing division in New York, has been elected to the board of the Textile Research Institute, succeeding **J. Spencer Love.**

W. G. Sirrine was reelected president and treasurer of Textile Hall Corp., Greenville, S. C., early this month.

Ed. C. Langham, executive secretary of Alabama Cotton Manufacturers Association, Montgomery, Ala., resigned effective July 1, to enter private business.

Harry B. Benson has been elected a member of the board of directors of Cheney Bros., South Manchester, Conn.

Howard B. Bonner, formerly plant manager of the Hespeler, Ontario, plant of Dominion Woolens & Worsteds, Ltd., has been transferred to the main office in Toronto as general manager.

William L. Lloyd, secretary and treasurer of the Thomas L. Leedom Co., Bristol, Pa., has been elected a director. Mr. Lloyd is a graduate of the Wharton School of Finance, University of Pennsylvania, and previously was with the Corn Exchange National Bank of Philadelphia.

W. C. McAbee has retired as superintendent of the cloth room at Henrietta Mills, Cherokee Falls, S. C., and has been succeeded by **H. C. Dixon.**

Paul Hawkins has been promoted to superintendent of carding at Gossett Mills, Williamston, S. C., from assistant superintendent.

G. R. McCallister, for the last 10 years with Springs Cotton Mills, Fort Mill, S. C., has accepted the position of superintendent of weaving at Calhoun Mills, Calhoun Falls, S. C.

George N. Miller has resigned as head of the engineering department of Riverside & Dan River Cotton Mills, Danville, Va. He was associated with the company for nearly 30 years.

Summey M. Cauble has resigned his position as superintendent of the Trenton Cotton Mills, Gastonia, N. C., to become superintendent of Acme Spinning Co., Belmont, N. C., succeeding **J. J. Duncan,** who has resigned after 24 years service owing to ill health.

T. H. ANDREWS who has been elected a director of the Thomas L. Leedom Co., of Bristol, Pa., Mr. Andrews is connected with the New York office of American Viscose Corp. and previously was associated with James Lees & Sons, Bridgeport, Pa.

Fred E. Shirley, for the last 15 years a weaving department superintendent of the Belton Mill, Belton, S. C., has resigned to accept a similar position with Ware Shoals Mfg. Co., Ware Shoals, S. C.

W. M. Kirby has resigned his position with Abbeville Cotton Mills, Abbeville, S. C., and has become superintendent of spinning at Woodside Cotton Mills Co., Simpsonville, S. C.

C. O. Morgan has been appointed superintendent of the Union plant of American Yarn & Processing Co., Maiden, N. C., having been transferred to his new position from a similar position at the company's Medora and Adrian plants at Mount Holly, N. C.

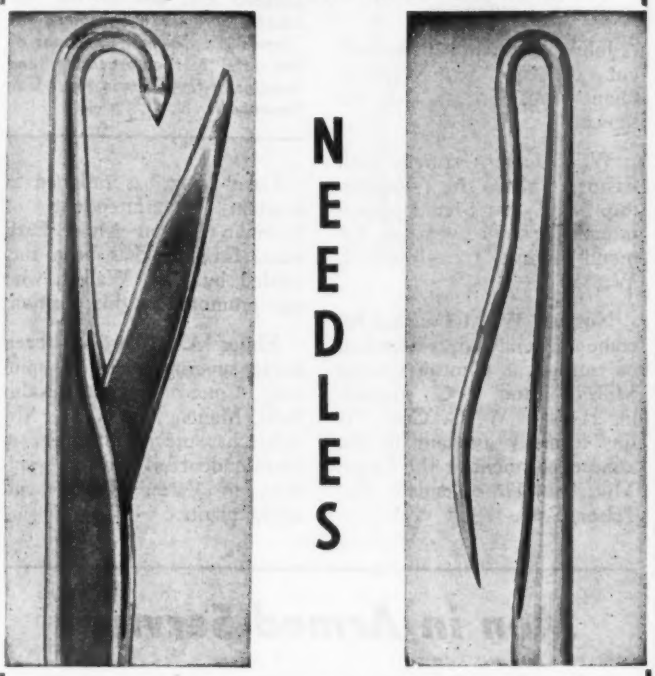
M. A. Massingale has become general superintendent of Southern Cotton Co., Birmingham, Ala., and **J. P. Holder** is now general overseer of carding.

E. E. Syms, superintendent of the woolen mill of the Manufacturing Division of Marshall Field & Co., Spray, N. C., has resigned.

E. F. Powell, formerly superintendent of the Valway unit of Callaway Mills, LaGrange, Ga., has become associated with the development department of Marshall Field & Co.

Henry A. Cox, who was formerly in charge of the production and planning department of Burlington Mills Corp.,

CHARLES COOPER CO., INC.
Bennington, Vermont
Manufacturers of
Quality LATCH and SPRING-BEARD



also
Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

★

Complete color assortments

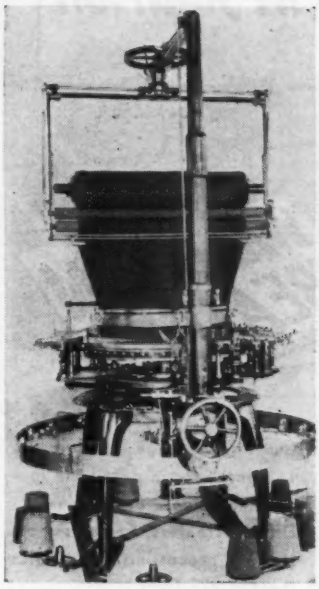
American Woolen Company

225 Fourth Avenue **New York**

Gain Production

With These Two NEW

Knitting Machines



Revolutionary design has been achieved in some features of these machines. For instance: The B-15 has automatic adjustment of jacks—

NO JACK RING
NO JACK CAM RING

This eliminates the old trouble of plugging up the space between rings.

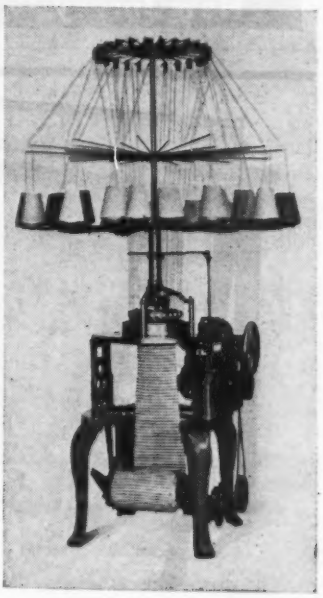
WRITE FOR THE FULL DETAILS

Model S-1
Single Head Spring Needle Knitting Machine

Designed for overcoating and heavy cloths, but will run the finest underwear just as easily. Gives greater production, at lower costs, and better fabrics.

Backed by Nearly 100 Years of Experience

Both these machines are simplified in scientific design throughout—to assure you new results in low-cost production, clean operation, steady performance and a richer, finer quality fabric. Let us outline to you the full scope of their production in a variety of fabrics.

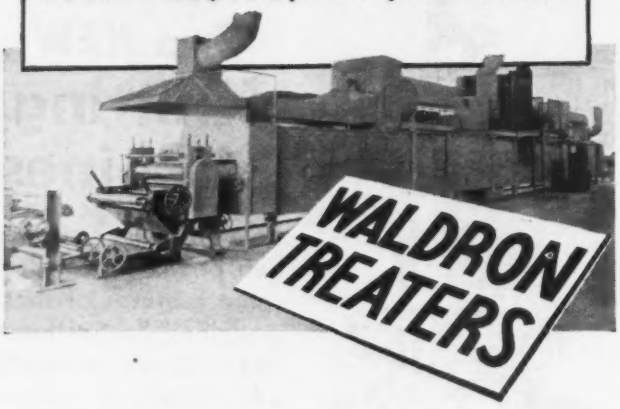


New Model B-15
Multiple Feed Latch Needle Knitting Machine

For straight high production of standard cloth at lowest possible cost under continuous operations. A bread and butter producer.

TOMPKINS BROS. CO., Inc.
622 Oneida St. **Syracuse, N. Y.**

Processing CLOTH with Plastics in solution



Complete machine line fills fibres or coats surface of material in web form with plastics in solution — unrolls, impregnates or coats, dries, cools, guides and rewinds.

Our new 20 page Catalog No. 112 describes in detail the mechanical features of WALDRON Treaters. Explains most modern processing for plastics treated products.

JOHN WALDRON CORP.
Main Office and Works
New Brunswick, New Jersey
MACHINES

FIDELITY 9-SKEIN REELER

Single- and Double-End Types. Collapsible arms on reel, automatic yardage control and improved tension device. Reduced doffing cycle with Twin-Unit System.

Write for Bulletin

FIDELITY MACHINE COMPANY
3908-18 FRANKFORD AVE., PHILADELPHIA, PA.

NEWS ABOUT MEN

Greensboro, N. C., has joined the War Manpower Commission staff as a textile specialist in North Carolina.

John Rhymer superintendent of the Santee Mills, Orangeburg, S. C., has resigned.

W. A. Laney, formerly with Erlanger Mills, Inc., Lexington, N. C., has become superintendent of weaving at Esmond-Virginia, Inc., Bluefield, W. Va.

Norman W. McCall has become general superintendent of carding at Clinton Cotton Mills, Clinton, S. C., succeeding the late W. G. Cox. He was formerly assistant in the same department at the Upper Mill, of The Kendall Co., Pelzer, S. C.

THE MARITIME COMMISSION in Washington has announced that one of the new Liberty Ships is to be named the "James W. Cannon" in honor of the late textile executive and founder of the Cannon Mills Co., Kannapolis, N. C.

Luke Long has resigned as assistant superintendent of Eastman Cotton Mills, Eastman, Ga., and has been succeeded by **J. B. Walker,** who was promoted to this position.

Elmer A. Allen has been made superintendent of spinning at one of the Mack Kahn mills, Manchester, N. H. Mr. Allen has previously been superintendent of cotton spinning in Bates, Pacific, and other plants.

Men in Armed Services

Robert J. Mebane, prominently connected with Burlington Mills Corp., Greensboro, N. C., before entering the Navy, and who is stationed at Charleston, S. C., has been promoted to lieutenant-commander.

G. W. Johnson, general manager and vice president of Plymouth Mfg. Co., McColl, S. C., recently received the Purple Heart awarded his son, Pfc. Lewis Ray Johnson, for wounds suffered in the battle of Cassino in Italy, January, 1944. Young Johnson is now back in action.

Edward J. Bullard, treasurer of E. H. Jacobs Mfg. Co., Charlotte, N. C., and major in the Army, recently was transferred to Camp Davis, N. C., from Mitchel Field, New York. He is commanding officer of the Army Airfield at Camp Davis.

Herman C. Kliber executive officer of the Procurement Division of the Philadelphia QM Depot and director of the Industrial Demobilization Planning Division of the depot, has been promoted to the rank of colonel.

Col. Vere Painter, Army Quartermaster Corps textile expert who has made his home for a number of years in Yeadon, Pa., has been named Deputy Director for Inspection of the Procurement Division, Office of The Quartermaster General. Col. Painter will be stationed at the headquarters of the QM Inspection Service, 521 Fifth Avenue, New York. He will relieve Col. A. H. Rogow, who has headed the New York office since establishment of the Inspection Service late in 1943. Col. Painter was assigned to the Philadelphia Depot from 1930 to 1942.

T. S. Tolar, Jr., an operating executive at the Central Falls, N. C., plant of Burlington Mills Corp., has been commissioned an ensign in the United States Naval Reserve.

Richard V. McPhail, assistant superintendent of Locke Cotton Mills, Concord, N. C., prior to entering the Coast Guard in October 1942, has rank of lieutenant (j.g.) and was the commander of a Coast Guard cutter which participated in the invasion of Europe and which rescued 126 soldiers and sailors from drowning off the coast of France in the initial assault. He is a graduate of the North Carolina State College Textile School.

Weld D. Schoonmaker, who was superintendent of the Gonic Mfg. Co., Gonic, N. H. until he was commissioned in the Navy as lieutenant (j.g.), is stationed at Norfolk, Va.

William S. Wanner, who up to the time of entering the

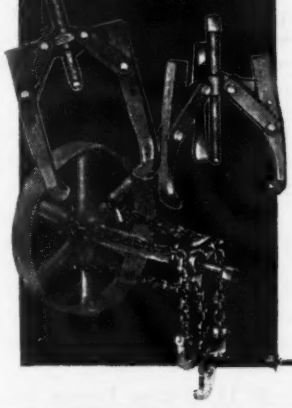
Perfect Butted Seams for Faster and Smoother Finishing

See Also Textile World YEAR BOOK and CATALOG

The Rayer & Lincoln Rotary Sewing and Marking Machine, fitted with the latest *Dinsmore Improved Positive Stripping Attachment* and showing the application of the *Merrow Butted Seaming Head.* Sews a strong, flat, butted seam, trims the goods evenly with a narrow margin and automatically marks each piece as sewing is done. This machine will save its cost each year — you need it for modern, low-cost finishing. The Merrow Butted Seaming Head can be applied to your present machine — write for estimate of cost.

DINSMORE MFG. CO.
SALEM, MASS.

ARMSTRONG-BRAY
Gear and Wheel Pullers



Prompt Shipments from Stock

STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special models. 12 types and sizes. CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

Write for Catalog Sheets.

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5340 Northwest Highway
Chicago 30, U.S.A.

THE LOYAL T. **IVES** COMPANY
EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

TO WIN QUICKLY AND COMPLETELY!

WE are concentrating all of our efforts — all our facilities — all our abilities — behind the well known gentleman whose likeness appears above. In doing so — we are also serving your best interests — even though we may temporarily be compelled to give you the impression that we are neglecting you. Our sole object is to help win as quickly and completely as possible. Meanwhile, we will help you users of Brinton Knitting Machines, to the best of our ability.

BRINTON
Circular Knitting Machines
3700 KENSINGTON AVE.
PHILADELPHIA, PA.

BUY UNITED STATES WAR SAVINGS BONDS

SENSATIONAL

How DEVOPAKE hides and covers *any surface in just one coat!*

Sensational performance counts even more in war time when materials and man hours are at a premium. DEVOPAKE saves time . . . and money . . . covers more surface per gallon . . . hides solidly *in one coat* . . . covers any interior wall surface. It's a self-sealer and finish coat in one, and has an oil base that makes it really wear! Specify DEVOPAKE for complete, guaranteed satisfaction. If your agent is temporarily out of this popular Devoe product, remember—war needs come first.

DEVOE PAINT

The 190th year of the Oldest Paint Maker in America

FIRST AVENUE at 44th ST., NEW YORK 17, N.Y.

BUILT TO SERVE YOU BETTER!

The World's Leader in Canvas Baskets, Hampers, Trucks

SHAMROCK

Manufactured by
MEESE, INC.
Madison, Ind.

service was supervisor at the Berkshire Knitting Mills, Reading, Pa., has been promoted from captain to major in the anti-aircraft artillery in Sardinia.

Joseph Allen Wheat, 2nd, chemist at the Celanese Corp. of America plant at Cumberland, Md., before entering the army two years ago, has been promoted to captain.

Homer J. Cornell, Indianapolis, before entering the armed forces, cost accountant of Real Silk Hosiery Mills, Inc., has been promoted to captain in the Marine Corps in Miami, Fla., where he is an instructor at a marine air base. He served 13 months as a bomber pilot in the Southwest Pacific and has the air medal, a presidential unit citation for the Marine First Division at Guadalcanal and other service ribbons.

Lowell H. Stormont, Indianapolis, who until entering the Army in 1942 was advertising director for Real Silk Hosiery Mills, Inc., for 13 years, lately a major in Army Air Forces, has been placed on an inactive status in accordance with a recent War Department policy to relinquish specialized personnel to strengthen the home front. He has served as director of the Fourth AAF film strip preparation unit at Sheppard Field, Texas, since August, 1942.

Wm. McLaughlin, formerly superintendent of the tufting department of the Valway plant of the Callaway Mills, LaGrange, Ga., has entered the armed services, and **Joseph Nix,** who has been assistant in this department has been named to succeed Mr. McLaughlin.

George T. Gardner, prior to assignment to active duty with the Army, assistant superintendent of Cramerton Mills, Inc., Cramerton, N. C., is now executive officer of the Contract Terminations Branch, Philadelphia Quartermaster Depot. He has been promoted to the rank of captain.

Obituary

Charles H. Bernheimer, 79, chairman of the board of the Bear Mill Mfg. Co., New York, N. Y., died July 1. He was a pioneer in the promotion of arbitration in the settlement of industrial disputes. He joined his uncle's firm, Adolph Bernheimer & Co., in 1881. This later became the Bear Mill, of which he was president from 1907 to 1928.

Albert Henry Chamberlain, 71, treasurer of Arlington Mills, Lawrence, Mass., since 1913, died in Andover, Mass., June 28. He was graduated from Harvard College in 1894 and from Harvard Law School in 1899.

David Welsh, woolen and worsted finishing consultant, died recently at Philadelphia. During the past seven years he has acted as consultant and has been the author of numerous articles on finishing and dyeing problems which appeared in TEXTILE WORLD. Prior to this time he had been associated in various dyeing and finishing capacities with Whitestone Dye Works, Mayo Woolen Mills, and W. J. Dickey & Sons.

Warren C. Steele, 50, at one time assistant editor of TEXTILE WORLD and since 1931 head of the Philadelphia Bureau of the Journal of Commerce, New York, died July 6 at his home in Overbrook Hills, Pa. He served in World War I as lieutenant in Quartermaster Corp.

Edward V. Carroll, 45, principal of the Bradford Durfee Textile School, Fall River, Mass., for the last two years, died June 22. He had been a member of the textile school faculty since 1921.

B. H. Bristow Draper, president of Draper Corp., whose death was noted in these columns last month, was buried from the Hopedale Unitarian Church on June 6. The honorary pall bearers were as follows: U. S. Senator Sinclair Weeks; Gov. Saltonstall; Rep. Joseph W. Martin of Attleboro; Lt. Winfield A. Schuster of East Douglas; Dr. Joseph I. Ashkins of Mendon; E. Kent Swift and William H. Hoch of Whitinsville; John F. Tinsley, Irving H. Very and Rufus S. Frost of Worcester; David E. Edward, Charles E. Spencer, Jr., Sidney W. Winslow, Jr., Phillips Ketchum, Charles B. Barnes, Robert A. Leeson, Na-

NEWS FOR TEXTILE PRINTERS

Using Water Soluble Paste Pigments

Continuous Runs of 15,000 Yds. to 33,000 Yds. Now Possible

Heretofore, in the printing of textiles, it has been necessary to stop the machine every 2400 to 3000 yards, to clean pigments from the doctor blades.

Lubricant D-6 Concentrate

lubricates and distributes the pigments so thoroughly and evenly that such frequent stops are no longer necessary. The minimum continuous yardage that has been run, using this lubricant, is 15,000 while the maximum is 33,000. Result — increased printing production and reduced maintenance cost.

Originally developed for one of America's leading textile printers, Lubricant D-6 Concentrate is now offered to the printing industry as a tried and proved product, — already used on well over a million yards.

Write for Bulletin T W.

KILCOMMONS CHEMICALS CORP.

MERCHANTS AND DISTRIBUTORS

511 Westminster St., Providence, R. I., U. S. A.

Smooth warps for easy weaving—

with Laurel RAYON SIZE*

Your rayon warps will be smoother, stronger, cleaner, more resilient and more resistant to atmospheric action if you use Laurel Rayon Size. Unlike ordinary sizes, Laurel Rayon Size penetrates and envelops the yarn—binds the filaments together. It reduces chafing and breakage, increases elasticity, equalizes variations in yarn tension. Does not shed. Removed quickly and easily in regular scour. Laurel Rayon Size gives high loom efficiency. Leaves cloth soft, smooth with good appearance and minimum defects.

Sizers and weavers throughout the industry tell us Laurel Rayon Size simplifies and speeds the weaving process. If you are not now using Laurel Rayon Size, save time and costs by sending for a trial order today. Available for immediate delivery. Our Laboratory Technicians will gladly recommend a formula to meet your exact requirements.

SOAPS • OILS • FINISHES

For Victory—buy extra War Bonds

Laurel SOAP MANUFACTURING CO · INC ·

Wm. H. Bertolet's Sons • *Established 1909*

Tioga, Thompson & Almond Sts., Philadelphia 34, Pa.

WAREHOUSES: PATERSON, N. J. • CHATTANOOGA, TENN. • CHARLOTTE, N. C.

ROME SOAP MFG. CO.

WRITE US FOR SAMPLES AND QUOTATIONS

MANUFACTURERS OF

Textile, Laundry

and

Special Soaps

ROME, N. Y.

D. R. KENYON & SON

RARITAN, N. J.

TENTERING and DRYING MACHINERY

THE STANDARD DE-SIZING AGENT

RAPIDASE

Dependable, speedy and economical de-sizing . . . Our technical staff always at your service.

for cottons rayons and mixed goods

WALLERSTEIN CO., INC.

180 MADISON AVENUE, NEW YORK

Standardize on
TABER ABRASER
"WEAR CYCLE" TESTS
All fabrics . . . cotton, woolen, rayon and silk can be quickly and easily tested and rated in terms of "wear cycles" with the same Taber Abraser. Scientific wear action by "Calibrase" wheels and turn table provide "wear cycles" that are totaled on built-in cycle counter.
Only a small 5"x5" swatch is required for each test which makes it practical to rate the wear quality of every bolt or lot of fabric.
Discover how you can guard against complaints and rejections with the Taber Abraser by writing for Bulletin 4001 NOW.
TABER INSTRUMENT CORP.
111 TW GOUNDRY STREET, NORTH TONAWANDA, N. Y.
ALFRED SUTER, 200 Fifth Avenue, New York, N. Y.
Eastern Representative
Designers and Builders of Precision and Scientific Apparatus

THEY'RE ALL COMPOUNDED IN

Finnell's Own Mill!

. . . affording a *single* and thoroughly dependable source of supply for all the types of powders listed below:

Finola Scouring Powder
For Washroom Floors, Basins, Bowls, and for Heavy Duty Scrubbing

Century Scouring Powder
A Mild Abrasive Cleanser

Solar Soap Powder
Vegetable Oil Base

Rubber Cleaner
Endorsed by Rubber Flooring Manufacturers Association

Also

Fino-Sorb
Oil and Grease Absorbent

Asesco Solvent Cleanser
All-Purpose Cleanser

Setol All-Purpose Cleanser
Heavy Duty

Han-Kleen Hand Soap
Vegetable Base

Han-Kleen Hand Soap
Heavy Duty

Crystal Cleanser
For Dishwashing

Killum
An Insecticide

For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1907 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

NEWS ABOUT MEN

thaniel F. Ayer, Robert Amory, John Cutter of Boston B. B. Gossett of Charlotte, N. C.; Wendell Williams of Milford; Charles E. Merriman, William C. Murphy and Frederick L. Chase of Providence; Paul Whitin of Northbridge; Harold M. Curtiss of Milford; Errick H. Milliken of New York; Robert R. Jenks of Pawtucket, R. I.; Richard C. H. Hartley of Fall River; Norman C. Cocke of Charlotte, N. C.; C. Fred Butterworth, Henry A. Billings, Selectman William Ferguson, Irwin G. Ammen and William H. Chase of Hopedale; Frank L. Nagle of TEXTILE WORLD, Boston.

Junius Hill Harden, 84, who in 1917 reorganized the Holt-Granite Mills, Haw River, N. C., and operated the plant for several years, died at his home at Graham, N. C., recently. His first connection with the textile industry was at Hopedale, where in the early 1880's he operated a cotton mill. Later he built the first electric power plant at Burlington, N. C., the Piedmont Power & Light Co., and its subsidiary, the Alamance Railway Co.

George Richmond Parsons, 83, Providence, R. I., a textile notable and formerly president and chairman of the board of directors of the Crompton Co., Providence, died June 8.

Frederick W. Cone, 65, formerly president of Asheville Cotton Mills, Asheville, N. C., and later manager of the Baltimore, Md., office of Cone Export & Commission Co., retired, died in Baltimore May 20.

George Walter Summer, 82, Newberry, S. C., who with associates organized Mollohon Mfg. Co., of Newberry, in 1901, and who was its first and only president until the company was sold to The Kendall Co., in 1926, died May 24. For several years he was also president of Fitzgerald Cotton Mills and Cothran Cotton Mill, both in Georgia.

Arthur E. Davis, 66, general manager of Rowan Cotton Mills, Salisbury, N. C., died June 12. He joined Rowan in 1919 as secretary and treasurer and later became manager. His earlier business connections were in the lumber business.

J. C. Jones, Jr., 35, treasurer of Thomaston Cotton Mills, Thomaston, Ga., died June 15.

Robert G. Laney, Sr., 65, secretary of Ora Mills, Shelby, N. C., died June 5.

George Russell Stearns, 84, who established Riverside Mills, Augusta, Ga., in 1888 which he headed until he retired in 1930, died recently.

Rufus Edwin Bostick, 37, vice president of Rosewell Co., Atlanta, Ga., died recently.

John David Walling, 63, for 33 years a departmental head of Graham Mattress Co., Columbia, S. C., died recently.

William H. Richard, secretary of Providence Pipe & Sprinkler Co., where he had been employed for the last 23 years, died at Providence, R. I. June 1.

Arthur C. Markgraf, superintendent of the Williamsport Textile Co., Williamsport, Pa., a subsidiary of Celanese Corp. of America, died recently.

O. J. Brickley, machinist for North Carolina Finishing Co., Salisbury, N. C., died May 30.

Loren W. Penney, 92, a mechanical engineer for the Saco-Lowell Shops, Newton, Mass., for 50 years until his retirement in 1929, died at his home in that city on June 5.

Elmer E. Grant, 83, foreman steamfitter at Great Falls Mfg. Co., Somersworth, N. H., died May 28. He was a native of Rollinsford, N. H., and had resided in Somersworth 38 years.

Roscoe H. Parrish, 55, for more than 20 years supervisor of the card room of Selma Cotton Mills, Selma, N. C., until his retirement several years ago died June 5.

B. Ransom Hicks, 76, Forest City, N. C., retired outside overseer for the Alexander Mfg. Co., died June 2.

Willis R. Hayes, 61, who had been associated with Carter Fabrics Corp., South Boston, Va., died June 6.

Claude Baxter Suttle, Sr., 83, for 25 years superintendent of the old Elizabeth Mills, Charlotte, N. C., prior to his retirement, died recently.

Don S. Laws, 39, master mechanic at Trenton Mill, Gastonia, N. C., died May 28.

Let LANITOL Do it

Reg. U.S. Pat. Off.

SUPERIOR SYNTHETIC DETERGENT

A highly efficient product for use in scouring and boiling off all textile fibres. Active in hard or soft water it may be used alone in the bath or in conjunction with soaps or alkalies with amazing results.

- Let LANITOL increase the detergent action of your soap and achieve cleaner stock, yarn or cloth through its rapid and complete rinsing properties.
- Let LANITOL improve the boiling off, processing and dyeing of rayon hose in one or two bath methods. A better finish and uniform shade is easily accomplished.
- Let LANITOL prove its value for washing off worsted tops and yarn to remove all oil and grease.
- Let LANITOL demonstrate its ability to thoroughly scour rayon and woolen cloth and effectively remove all residual soap, dirt, etc. in the rinse, leaving the cloth with a pleasing hand and free from objectionable odors.
- Let LANITOL raise the efficiency of your fulling operation—a small addition to the soap liquor increases its penetration and activity when applied to the cloth in the mill and accelerates the fulling action.

Sample or demonstration furnished on request.

ARKANSAS CO., INC.

Newark, New Jersey

Manufacturers of Industrial Chemicals for over 40 Years

RED-RAY RADIANT HEAT BURNERS SPEED UP DRYING OF THICK FELTED GOODS

A single 119 inch Red-Ray Burner applied to cans for drying inch thick felted material. Drying speed increased 60 per cent.

WRITE FOR COMPLETE DETAILS

RED-RAY MANUFACTURING COMPANY

455 W. 45th STREET — NEW YORK, N. Y.

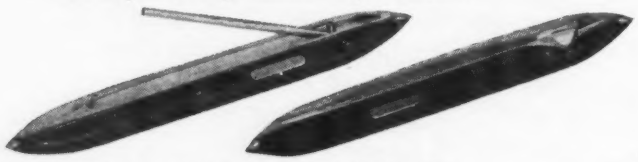
Southern Representatives:

CAROLINA SPECIALTY COMPANY CHARLOTTE, N. C.

For **FIBRE SHUTTLES**

Whatever the Weaving Requirements

— depend on WATSON-WILLIAMS, the Shuttle People, with over 100 Years experience and originators of the century's leading Shuttle improvements.



WATSON-WILLIAMS MFG. CO., Millbury, Mass.

SOUTHERN OFFICE: W. F. Daboll, John W. Littlefield, 810 Woodside Building, Greenville, S. C.

NORTHERN REPRESENTATIVE: G. C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.

★ ★

J. E. SIRRINE & CO.

GREENVILLE • SOUTH CAROLINA

Engineers for more than 40 years

TEXTILE MILLS • CHEMICAL PROCESS PLANTS

PULP & PAPER MILLS • WASTE DISPOSAL

STEAM POWER PLANTS • STEAM UTILIZATION

WATER • APPRAISALS • PLANS • REPORTS

NEWS ABOUT *Mills*

Cotton Mill News

B. & M. Mattress Co., 2310 South Main St., Houston, Tex., has purchased site for new local plant as a postwar project, to cost over $60,000, with equipment.

Carolina Mills, Inc., Maiden, N. C., has let general contract to Herman Sipe & Co., Conover, N. C., for new pumping station and water reservoir for service at mill, and will carry out work at once.

Crompton Co., of West Warwick, R. I., has acquired two sites near Hendersonville, N. C., on which a 600-loom mill will be built to weave corduroys when wartime restrictions are lifted (as previously reported). Later this mill will be expanded, and a plant for cutting and dressing corduroys may be added. Plant No. 1 will be located on a site of 50 acres on the new East Flat Rock Highway one mile from Hendersonville, and Plant No. 2, comprising 40 acres, is at Horse Shoe, six miles west of Hendersonville on the Brevard Highway. Preliminary plans are in progress for initial plant consisting of a main one-story building and several auxiliary structures, with power substation to connect with lines of Duke Power Co., which will furnish service. Cost is reported in excess of $250,000.

Raybestos Division, Raybestos-Manhattan, Inc., Stratford, Conn., has let general contract to O. F. Burghart, Bridgeport, Conn., for new one-story addition, about 50 x 105 ft., for warehouse service. Cost estimated close to $25,000, with equipment.

Riverside & Dan River Cotton Mills, Inc., Danville, Va., has had a long-range survey of the company's power problems started by Charles T. Main, Inc., engineers, of Boston, Mass., who will later present estimates for the installation of high-pressure boilers and a new, large, high-speed turbine.

Robinson Thread Spinning Co., New Bedford, Mass., recently organized with capital of 5000 shares of stock, no par value, plans operation of a mill in this vicinity. Alfred P. Lowell, New Bedford, is president; Greer M. Taylor, Jr., 1 Federal St., Boston, Mass., is treasurer and representative.

Russell Mfg. Co., Middletown, Conn., is completing plans for one-story addition, 100 x 100 ft.; estimated to cost approximately $65,000, with equipment. Project is understood to have a priority rating. Erection contract will be let soon. Leo F. Caproni, New Haven, Conn., is architect and engineer.

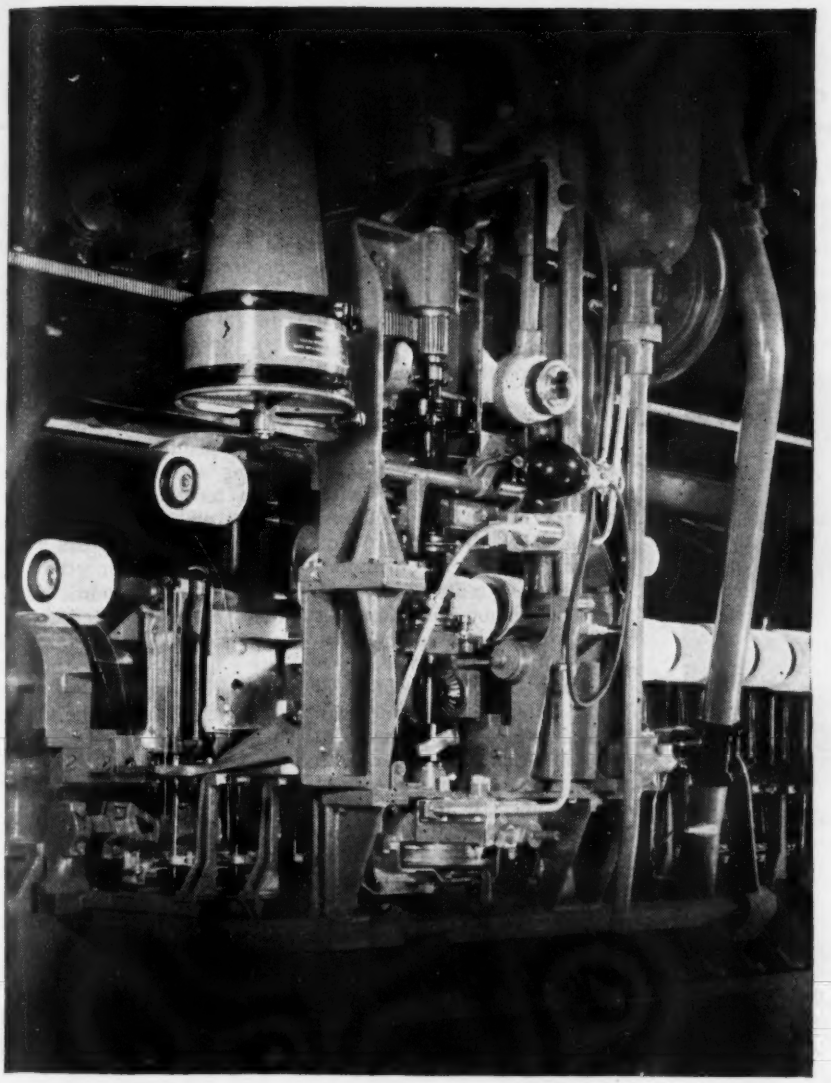
United States Rubber Co., New York, N. Y., Textile Division, has contracted with government for extensions at Winnsboro Mills, Winnsboro, S. C., used for tire cord and tire fabric manufacture, with installation of additional equipment for increased output. Cost about $35,000, with fund in that amount to be furnished by Defense Plant Corp., Washington, D. C., Federal agency. Work will proceed at once.

West Point Mfg. Co., West Point, Ga., which recently purchased two more mills in Alabama, the Samoset Mills at Talladega and the Wehadkee Yarn Mills at Rock Mills, will operate these as the Chinnabee Division.

Wool Mill News

Berkshire Woolen Co., Pittsfield, Mass., sustained a fire loss at mill recently. No official estimate of amount announced. The damage will be replaced.

Gordon Woolen Mills, Inc., Newport and Hillsborough, N. H. has acquired the stock of Mrs. L. J. Young and the late L. Josselyn Young, former treasurer. Alfred Guidopti, for the last year superintendent and designer of the Atlanta Woolen Mills in Atlanta, Ga., has been engaged as superintendent of the Newport mill. G. A. Adam, of New York, has been elected treasurer of the company, with Katherine E. Rock, former clerk, as assistant treas-



"Machines that Keep Running..."

BARBER-COLMAN Automatic Spoolers and Super-Speed Warpers have proved their ability to keep running with very little down time for repairs, and extremely low expense for repair parts. The reason for this is that we paid particular attention, in the design of every part of the machines, to the idea that they must be able to stand up under practically continuous operation. That is why the records show very few cases of breakage due to weakness or poor design, and, over a period of years, an average of less than the expected amount of replacements due to wear. This record of steady service has brought to the owners and operators of Barber-Colman machines an exceptionally good achievement in high and continuous production, which has been especially valuable in these war years when it has been important to eliminate every possible waste of machine-hours and man-hours. Operating and productive efficiency in the production of vital war goods has been kept at a high point in mills using Barber-Colman equipment, with the added advantage of uniform high quality of product obtainable with these machines. We urge you to give full consideration to the durability, long life, high efficiency, and low maintenance and repair costs of Barber-Colman Automatic Spoolers and Super-Speed Warpers when you are considering the purchase of spooling and warping equipment. Our experienced branch office and field representatives are ready to discuss your situation thoroughly with you at any time.

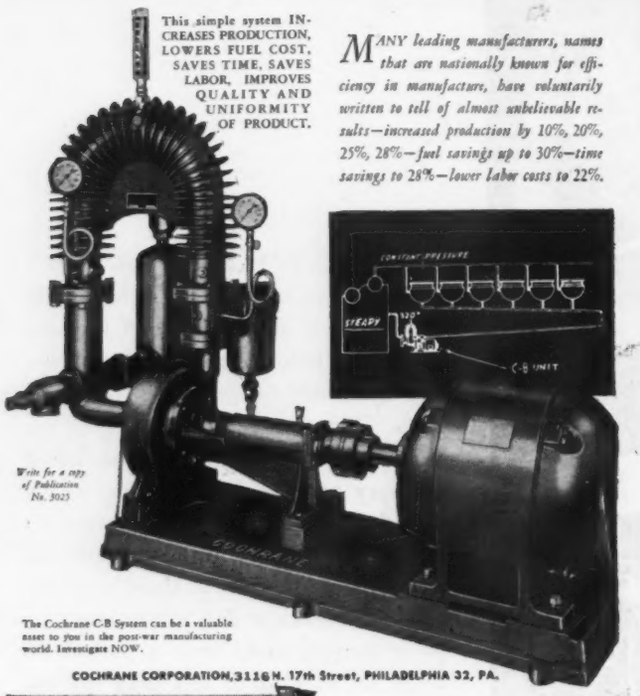
AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

This is the Heart of the COCHRANE C-B SYSTEM of High Pressure, High Temperature Condensate Return


This simple system INCREASES PRODUCTION, LOWERS FUEL COST, SAVES TIME, SAVES LABOR, IMPROVES QUALITY AND UNIFORMITY OF PRODUCT.
MANY leading manufacturers, names that are nationally known for efficiency in manufacture, have voluntarily written to tell of almost unbelievable results—increased production by 10%, 20%, 25%, 28%—fuel savings up to 30%—time savings to 28%—lower labor costs to 22%.
Write for a copy of Publication No. 3025
The Cochrane C-B System can be a valuable asset to you in the post-war manufacturing world. Investigate NOW.
COCHRANE CORPORATION, 3116 N. 17th Street, PHILADELPHIA 32, PA.

COCHRANE C-B SYSTEM

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE

Specialists in Textile Testers

Scott has pioneered various testers now standard in the textile industry. Our 60 models include machines for tensile, hysteresis, burst, flexing, twist, crepeage, etc., etc., from single hair to 1 ton.

SCOTT TESTERS
*Registered Trademark

HENRY L. SCOTT CO. 95 Blackstone St. Providence, R. I.

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

urer. Gordon E. Brown of the Homestead Mills in Swanzey, N. H., and Leslie E. Badmington were renamed as president and vice president, respectively.

Hayward-Schuster Woolen Mills, Inc., East Douglas, Mass,. recently chartered, will take over and merge four associated mills in this area, including Haywood Woolen Co., and Schuster Woolen Co., both with local plants; Millbury Woolen Co., Millbury, Mass.; and H. T. Hayward Co., Manchaug, Mass. Operations at respective mills will be continued as heretofore. Cornelius A. Callahan is executive vice-president and general manager.

North Star Woolen Mill Co., Minneapolis, Minn., will have the Means Weave, of Lowell, Mass., associated with it in the distributive end of the business, with the North Star sales organization presenting Means Weave handwoven throws to the trade nationally.

Rochambeau Worsted Co., King St., Providence, R. I., will soon start work on a 1-story brick mill addition, 40x50 ft. Dwight Seabury Co., Pawtucket, drew the plans.

Swift River Woolen Co., Westerly, R. I., has started rebuilding its dyehouse and storage building, 42x90 ft. costing $30,000. C. R. Oppy, Westerly, has the general contract. Mason work will be done by Samuel Nardone's Sons Co., Inc., Westerly. Only a part of the project can be done at this time.

Joseph Talbot Textile Co., Inc., Lowell, Mass., has been chartered by Joseph Talbot, head of Talbot Worsted Mills, Bristol, Pa., and associates, with capital of 100 shares of stock, no par value, to operate a mill in vicinity of Lowell. Mr. Talbot will be president of new company.

Rayon & Silk Mill News

American Viscose Corp., New York, has appropriated funds for the purchase of additional equipment for the company's plants at Nitro, W. Va., and Meadville, Pa., to be obtained as soon as conditions permit its purchase which may not occur until the war has ended or the pressure of war demand for metals and other vital materials has materially decreased. When obtained, the new equipment will be used to increase the output of viscose-process rayon staple at the Nitro, W. Va., plant by 12,000,000 lb. a year, and to increase the annual output of acetate rayon yarn at the Meadville, Pa., plant by about the same poundage.

E. I. du Pont de Nemours & Co. have completed the purchase of the site near Chattanooga, Tenn., for its postwar nylon plant, and deeds transferring about 600 acres have been recorded at the county clerk's office. The deeds show that the company paid a total of $202,800 for the site, which is on the north side of the Tennessee River approximately three miles from the city limits. The property fronts the river and extends to a point just below the Chickamauga Dam.

Excelsior Mills Clemson Plant, Clemson, S. C., a rayon tire-cord plant of Deering, Milliken & Co., is completed and began production last month. The mill is the first rayon tire-cord plant to be erected in South Carolina and is one of the largest of such in the United States. The mill is more than 600 ft. long, of tile construction, air-conditioned throughout to maintain a maximum temperature of 81° F. the year around. The lighting is fluorescent and sound equipment will be installed to furnish music to employes while they work. A cafeteria serves hot lunches to the workers. Fifty brick houses have been erected to house key employes and their families. All of the houses are equipped with electric water heaters, electric stoves and refrigerators and circulating oil heaters for warmth in winter. D. D. Quillan, plant manager, has set up an employment department and training school at the Textile Building at Clemson College to train employes for the work. Ground was broken for the building in February.

Goodyear Tire & Rubber Co., Decatur, Ala., has started construction on still another addition to its textile mills as one new addition has just been completed. Otto L. Beiswenger, manager of Goodyear's engineering staff, said the second addition, like the first, will be devoted to production of rayon fabric for tires and other rubber products. The second addition will cost $500,000 and will mean employment of 250 more persons. The two new additions

Gessner

Improved Cloth Finishing Machinery

Nappers, Presses, Decating Machines, Decating Aprons, Vacuum Extractors, Spot Proofing Machines, Gigs, Brushes, Scutchers, Shrinking Plants, Sponging Machines, Hydrolizers, Squeezing Machines

DAVID GESSNER CO.

Worcester, Mass.

How Fast and Safe will Samples DRY?

IN

EMERSON OVENS

Samples are safe from scorching without constant attention of operator

10 Basket Oven
Floor Space 3' x 6'

Electrically heated, and temperature controlled by thermostat.

Fans provide air circulation.

Bone-dry weights determine moisture regain in fabrics, yarns, raw materials.

Scales for weighing samples in oven operated without opening oven door.

Savings made by checking specifications for each manufacturing department.

10 basket oven for samples of ½ lb. or more
10 cylindrical baskets 8" diameter—9" deep.
Or 8 baskets or reels 7"x7" and 18" deep
or 20 large skeins dried from hooks.

EMERSON APPARATUS CO.

177 TREMONT ST. • MELROSE 76, MASS.

CHAPMAN STATIC NEUTRALIZER

Reduces waste and Stabilizes the production rate in many operations

USED ON

CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES

CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 268, PORTLAND, MAINE

★ ★

In the South *Of the South*

Serving the South

CONSTRUCTION ★ MODERNIZATION

DC **DANIEL CONSTRUCTION CO., INC.**
Greenville, S. C. Birmingham, Ala.

★ ★

SEARCHLIGHT SECTION

POSITIONS VACANT

MAINTENANCE MECHANIC wanted by cotton mill in piedmont section. Permanent position for right man. Advise qualifications and salary expected. P 886, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED TECHNICALLY trained, thoroughly experienced man acquainted all phases starch operations and applications textile industry, for technical sales and new product developmental work. Excellent opportunity. Northwest corporation. P-887, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED TEXTILE technician with theoretical and practical experience on carding and spinning machinery. Permanent job with good post-war possibilities. Traveling required. State salary and draft status. P 898 Textile World, 330 W. 42nd St., New York 18, N. Y.

TECHNICAL EDITOR. For textile magazine. Must have exceptionally good command of English. Write experience and salary required. P-854, Textile World, 330 W. 42nd St., New York 18, N. Y.

BUSINESS OPPORTUNITIES

FOR SALE, thread finishing plant, capacity about 500 lbs. per week, located in Detroit, Mich. Welch 12767 Loretto Detroit, Mich.

POSITIONS WANTED

OVERSEER OF KNITTING, 23 years experience, 6 years mechanical development in large textile mill. Thoroughly familiar with all equipments of hosiery, underwear, knitting and sewing machines. PW-894, Textile World, 330 W. 42nd St., New York 18, N. Y.

AVAILABLE FOR managerial or supervisory connection. Eighteen years experience in the manufacture of silk, synthetic and cotton fabrics. Good background of experience and accomplishment. Acquainted with modern methods of manufacturing. Excellent relations with labor; knows cost and waste control. Textile school graduate, now employed. Mexican inquiries invited. PW-888, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER DYEING experienced on raw stock and piece dyes cotton warp unions. Has worked on most machines. Understands scouring, bleaching, and carbonizing both wet and dry. Have had some laboratory experience, have handled some large dyehouses. Have had own business few years but would like to return to dyehouse. PW 889, Textile World, 330 W. 42nd St., New York 18, N. Y.

PRACTICAL RAYON crepe and hosiery throwster desires to make connection with a reputable concern. Age 44. PW 891, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED

HIGH GRADE, at present employed, full fashioned superintendent, foreman, fixer, having through years of experience acquired a thorough knowledge of the most modern equipment and materials, desires to change to concern which will recognize ability. PW 890, Textile World, 330 W. 42nd St., New York, N. Y.

ASSISTANT SUPERINTENDENT or plant manager, 22 years experience on hosiery, underwear and cloth. Am competent and progressive. Desire permanent position. PW-892, Textile World, 330 W. 42nd St., New York 18, N. Y.

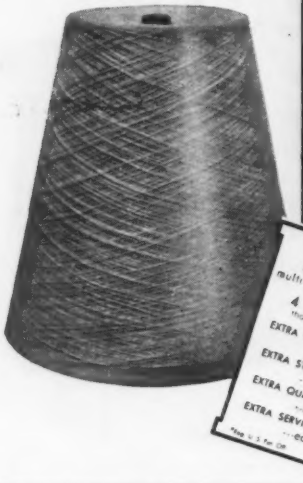
JUNIOR EXECUTIVE, presently employed desires change. Age 32, textile school graduate, married, children, reasonably draft free. Ten years experience in manufacturing, finishing, production management, maintenance, supervising, designing, quality control, traffic, personnel and purchasing. Full details of experience on request. PW-895, Textile World, 330 W. 42nd St., New York 18, N. Y.

CONTRACT WORK

COMMISSION SPINNER for two to three-run all wool yarns; also commission weaver wanted. Permanent connection. Address Box 830, Suite 1800, Times Tower, New York, N. Y.

Additional Employment Advertising on Page 195

AMERICAN



...more economical to use because....

it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO

MOUNT HOLLY, NORTH CAROLINA

Sales Manager, E. F. REDDING, MOUNT HOLLY, N. C.

CHATTANOOGA, TENN.
Mr. Tom Moore
736 Chestnut Street

PHILADELPHIA, PA.
Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

MOUNT HOLLY, N. C.
Mr. Edwin Hutchison
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

INDUSTRIAL ENGINEERS

Specializing in

TEXTILES FOR MORE THAN A QUARTER OF A CENTURY

RALPH E. LOPER CO.

COST SYSTEMS — WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS — SPECIAL REPORTS

GREENVILLE, S.C. — FALL RIVER, MASS.

"YOU CAN COUNT ON WAK COUNTERS"

They are

RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

add about 250,000 sq. ft. of floor space to the original Goodyear mill in Decatur. The completed addition, and the new one, which is to be completed about Aug. 1, are one-story buildings, 280 x 360 ft. They bring the total floor space utilized by Goodyear in Decatur to 402,888 sq. ft. The latest addition is being built for Goodyear by the Rust Engineering Co., Birmingham, Ala., and Pittsburgh, Pa.

Henco Silks, Inc., Waterbury, Conn., have filed notice of final dissolution.

Little Falls Ribbon Mill, Inc., Little Falls, N. J., care of Jacob Fox, 790 Broad St., Newark, N. J., attorney and representative, recently organized with capital of 1500 shares of stock, no par value, plans operation of rayon mill.

Putnam Silk Corp., New London, Conn., has filed preliminary dissolution papers.

Spectrum Fabrics Corp., 231 South La Salle St., Chicago, Ill., recently chartered with capital of $500,000, plans operation of a mill for manufacture of a line of rayon fabrics. Incorporators include Jack Jacobs and Leo Schwartz.

United States Rubber Co., New York, N. Y., Textile Division, has awarded contract to Carrier Corp., Syracuse, N. Y., for installation of a complete air-conditioning plant and system in new mill now in course of construction at Scottsville, Va., to be used for high-tenacity rayon yarn manufacture (previously reported).

Knitting Mill News

Brodnax Knitting Mills, Brodnax, Va., expect to resume operations in the near future after rebuilding the main building of this plant which was destroyed by fire in September, 1943.

Burson Knitting Co., Rockford, Ill., is making improvements in a warehouse building at mill, for which construction contract recently was awarded to Holm-Page Co., Rockford.

Hutchman Knitting Mills, New York, N. Y., a new concern, has leased space in building at 1180 Broadway.

Norfolk Hosiery Co., Inc., 117 Jamaica Plain, Boston, Mass., recently chartered with capital of 1,000 shares of stock, no par value, plans operation of a knitting mill. J. I. Gordon is president.

Rockwell Hosiery Mills, Inc., Rockwell, N. C., have been awarded a North Carolina charter to manufacture hosiery, with an authorized capital of $100,000 and a subscribed stock of $5,800 by Junius Yorke Peeler and J. H. Sides, of Rockwell, and Harry W. Mooney of Mount Pleasant.

Strutwear Knitting Co., Minneapolis, Minn., has awarded contract to William Bros. Boiler & Mfg. Co., Minneapolis, for improvement in boiler house at mill, including new smoke stack.

Supersilk Hosiery Mills, Ltd., London, Ont., have arranged for change in company name to General Products Mfg. Co., Ltd.

Processing Plant News

Acme Dyers, Inc., 1523 North Fremont St., Chicago, Ill., have been incorporated with capital of $50,000, by Walter E. and Carl F. Schuessler, officials of Schuessler Knitting Mills, same address, to operate a yarn dyeing, bleaching and processing plant.

Hudson Piece Dye Works, 155 McBride Ave., Paterson, N. J., has work under way on new one-story addition, estimated to cost approximately $60,000, including equipment.

Imperial Printing & Finishing Co., Bellefont, near Cranston, R. I.—Mill of this company has been purchased by Atlantic Tubing & Rubber Co., Cranston, which will occupy in part for another line of output. A section of property is occupied under lease by Acro Thread Co., which will continue operations at same location for time being.

Louden Hosiery Dyeing & Finishing Co., Olney Philadelphia 20, Pa., has been established as a partnership by William H. Drum, Herman Hardwick and Ellwood F. Jones with 20 years experience in dyeing and finishing women's hosiery.

Mills, Inc., Apponaug, R. I., recently organized, have acquired local mill and other property of Apponaug Co., which will be operated in future as Apponaug Co. Division of Mills, Inc. Production will be continued as heretofore.

Mothproofers, Inc., Lonsdale, R. I., recently organized with capital of 600 shares of stock, plans operation of a mill in this vicinity for manufacture of a line of special processed fabrics. George Triedman, 44 Alfred Stone Rd., Providence, R. I., is principal incorporator.

SEARCHLIGHT SECTION

(CONTINUED FROM PAGE 193)

THERE ARE MANY ATTRACTIVE OPENINGS IN MILLS

In all sections of the United States and Canada. If you are seeking employment, write us fully regarding your experience and position desired; we will inform you of positions now open in your line of work.

CHARLES P. RAYMOND SERVICE, Inc.

294 WASHINGTON STREET BOSTON 8, MASS.

Over 45 years' confidential employment service for men seeking positions and employers seeking men.

WANTED

PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-885, Textile World
330 West 42nd St., New York 18, N. Y.

FIXER WANTED

By southern full fashioned hosiery mill, capable of completely overhauling 45, 48 and 51 gauge machines. Permanent post war employment. State age, experience, family and draft status.

P-875 Textile World
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

SUPERINTENDENT OR ASSISTANT MANAGER

A manufacturer located in the United States who owns manufacturing plants in several countries, desires to employ Superintendent or Assistant Manager for their cotton mill and finishing plant which is located in a large industrial South American city. For further particulars, write to address below.

P-881, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED: LOOM FIXER

A manufacturer located in the United States who owns manufacturing plants in several countries, desires to employ a loom fixer for their cotton mill which is located in a large industrial South American city. For further particulars, write to address below.

P-880, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED TO EMPLOY
an experienced

OPERATOR

must know jacquard weaving and double shuttle looms.

Box 1112, Athens, Ga.

WANTED

Warper and Beamer

Experienced on cotton (Plush Mill)
Give full details in first letter

P-878, Textile World
330 West 42nd St., New York 18, N. Y.

Professional Services

LANCASTER, ALLWINE & ROMMEL

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's Fees, sent without obligation. Simply ask for "booklet and schedule."

Established 1915

Patents & Trade-Marks

Suite 448, 815—15th St., N. Y. Washington, D. C.

WANTED

Two Men For Felt Mills

One for felt salesman; the second for Assistant Superintendent for a mill manufacturing hard felt, polishing wheels and sheet felt. The positions are with a well-established concern, and for the right men there is an excellent opportunity. Address in confidence

Charles P. Raymond Service, Inc.

294 Washington St. Boston, Mass.

Over forty-five years Confidential Employment Service for Mills.

WANTED

VELOUR MILL

Small Velour Weaving Mill Up to 25 Looms. Send Full Details as to the Type of Looms and Other Equipment.

W-883, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Four dry cans for Johnson slashers 52" between flanges by 22" diameter.

W-897, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED

Your Obsolete Sewing Threads

Send samples and quantities for quick disposal.

W-675, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

New or used laboratory size jig
AND
hand printing machine

R. C. BROWN

7464 Nemours Bldg., Wilmington, Del.

(POSITION WANTED)

ATTENTION TEXTILE MILLS

One of the leading individuals in the UPHOLSTERY & DRAPERY FIELD, with a going business and long established MILL NAME known all over the United States and Canada, with running patterns now in the lines of leading Manufacturers and Jobbers. Desires to interest a large mill in opening an UPHOLSTERY & DRAPERY DIVISION. The advertiser is an outstanding STYLIST, SALESMAN & TECHNICIAN with plenty of initiative and general ability who visualizes most excellent prospects in such a tie up for PRESENT and POST WAR. Can furnish highest credentials.

PW-893, Textile World
330 West 42nd St., New York 18, N. Y.

Cotton technologist

having exceptional research experience and advanced technical training wants responsible position with either a cotton manufacturing company or a cotton research organization.

PW-900, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Up to 12 Guskin double Shuttle or any other make Loom, with or without Jacquard heads. Give specifications and prices in first letter.

W-879, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

C & K AUTOMATICS

C & K Heavy Worsted 4 by 1 Automatics 82" or 92" wide taking 1½" dia. bobbin. Describe fully with price and where can be seen.

W-882, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

We offer 18 Nasmith 6 head combing machines in A1 running condition, also 4 sliver lap and 4 ribbon lap machines. Reasonable quotation.

FS-857, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

HYDRAULIC PRESSES

30"x52" 3 openings, 36"x36" single openings, 52"x26" single opening also other size Presses, Pumps and Accumulators. ALL TYPES HYDRAULIC MACHINERY. HIGHEST PRICES PAID FOR YOUR USED EQUIPMENT.

UNIVERSAL HYDRAULIC MACHINERY CO.
285 Hudson Street New York City 13

FOR SALE

1—Failles Sewing machine—19 needles
2—Single Cylinder Garnetts
1—Dusting Machine

FS-884, Textile World
330 W. 42nd St., New York 18, N. Y.

FOR SALE

Textile coating unit complete, consisting of eight (8) cans 107" wide, mixing tank, knife coater and folder. Suitable for processing Army duck or other textiles.

Delaware Floor Products Inc.

Wilmington 99, Delaware

(ADDITIONAL EMPLOYMENT ADS ON PAGE 193—WANTED AD ON PAGE 198)

TEXTILE AUXILIARIES

FROM OUR OWN STOCK "HARD TO FIND MACHINERY":

3—Franklin Process Package Dyeing Machines, Complete with Pumps and Springs, 300 lbs.—200 lbs.—50 lbs.—Capacity
3—90' Tenter Frames—Steel Construction
1—Double Section Warp Drier
1—130" Warp Splitter
2—Ping-Pong Machines
1—Wool Top Dye and Back Washer
1—48" Hydro Extractor—Rubber Lined Basket—Lead Lined Housing
2—A & G Yarn Driers (Continuous)
1—Tray Drier

4—36" Hydro Extractors—2 Baskets Copper—2 Baskets Iron
3—54" Simpson Winders—Ball Bearings
2—40' Silk Tenters 50" or 60" wide
1—50' Silk Tenters 50" or 60" wide
1—40' Straight Tenter 102" wide
2—45" B.B. Scutchers
1—V. Vlanderen Mixer with 15 HP Motor
1—66"—5 Bowl Watermangle
2—50"—6 Bowl Calenders—Roller Bearings
1—30' Silk Tenter—60" Complete with Drier and Steamer

TEL. DEXTER 9650 — 1128 N. MAIN ST.

PROVIDENCE, R. I.

FOR SALE

BTS

1—Cleveland Dressing Frame 87"—brass plates.
1—72" Voelker Press.
1—5 ft. dia. Slasher Can (copper).
1—Gessner Semi-Decator 72" x 36" dia. with #2 Nash Pump and motors.
1—C&M 72" Cloth Roll Cradle.
1—Sturtevant Multivane Fan, size 5, design 3.
50,000—4¾" x 6½" trav. SPOOLS, heads ¾" thick metal bound. For Tire or Coarse Yarn.

BOBBINS • SPOOLS (all sizes) • SUPPLIES • PULLEYS, etc.

Direct Factory Agents Walter L. Parker Bobbin & Spool Co.

BAY STATE TEXTILE CO.

220 HARTWELL STREET • FALL RIVER, MASS.

50—Draper looms, model "E", individually motor driven, for 40" goods.
20—Draper looms, model "E" for 54" goods.
20—Crompton & Knowles 75" Automatic Filling mixers, 2x4, motor drive, bobbin changing.
30—Crompton & Knowles 78" looms, 2x1, 20 harness, intermediate head, individually motor driven.
80—#90 Universal Quillers or coppers.

PATERSON SILK MACHINERY EXCHANGE

24 SPRUCE STREET — SHERWOOD 2-1363-4-5 — PATERSON, N. J.

JOHN J. McCLOSKEY, Inc.

MANUFACTURERS AND DEALERS

TEXTILE MACHINERY OF ALL TYPES

APPRAISALS — WOOLEN—WORSTED—COTTON — LIQUIDATIONS

NEW AND USED

Philadelphia Office: 140-142 So. Front Street, Factory Warehouse: Collingswood, N. J.

HARRY STEPHENSON

IMPORTER, DEALER AND MANUFACTURER

TEXTILE MACHINERY AND APPLIANCES

New and Used

River Works, Andover, Mass.

GAINES TEXTILE MACHINERY CO.

Dealers in Rebuilt and Guaranteed Yarn Winding and Spinning Machinery

141-45 West 17th Street — New York, N. Y.

HOSIERY MACHINES

KNITTERS - RIBBERS - LOOPERS
CYLINDERS - DIALS - TRANSFERS
RIBBER CYLINDERS & DIALS
UNION SPECIAL SEAMERS

C. M. FRENCH

Commercial Trust Bldg., Philadelphia 2, Pa.

AIR COMPRESSORS

17—355, 528, 730 & 1100 ft. Cap.

TANKS ON TOWERS

25,000, 50,000, 70,000 & 100,000 Gal. Cap.
—Towers 25 to 156 ft. high.

R. C. STANHOPE, INC.

60 East 42nd St. — New York, N. Y.

FOR SALE

6 Gerry & C & M Rag Pickers
5 Bramwell Card Feeds
4 All Iron Woolen Cards
40 #50 Universal Winders, Rebuilt
30 #90 Universal Winders, Rebuilt
5 #180 Universal Winders, Rebuilt
4 Whitin Quillers
Warping Mills, Various widths, rebuilt
15 Long Chain Beamers
C & K, 4x4 Box, 25 Harness Looms, rebuilt
10 P & W, & C & M Double Shears
8 Gessner & Voelker Cloth Presses
1 E & H Folder
2 Woonsocket 78", 20 roll D. A. Nappers
1 2 burner 76" C & M Singer

Write to us advising us of your needs or any idle Machinery you wish to dispose of.

FRANK W. WHEELER COMPANY

1837 E. Ruan St. Philadelphia 24, Pa.

Phone JEFferson 4771

STANDARD SPECIALS

FOR THE SPINNER OR DYER

1 Foster #101 Winder, 550 Volt, Motor
100 Spindles, 50 Coning—50 Tubing—Emulsion Attachment

FOR THE WEAVER

24 Draper Worsted Looms
81" R. S., 2 x 1 Box, 20 Harness
550 Volt, Motor, Built 1930

FOR THE FINISHER

1 20th Century Dryer,
36"—72" Wide, 12 Yds. Per Min.
3 Yrs. Old, Now Running.

STANDARD MILL SUPPLY CO.

1064-1090 Main St. Pawtucket, R. I.

TELE. PERRY 1037-38-39

FOR SALE

Parkhurst 48 in. DUPLEX BURR PICKER
2—WHITIN 50 inch CARD FEEDS
Davis & Furber MIXING PICKER
HARWOOD Large Hopper FEED
One SPENCER OILER
15—TOMPKINS KNITTING TABLES

EXTRA-CYLINDERS

(Both Spring & Latch Needles)

KNITTING PARTS

BURR-WHEELS

(All makes and Gages)

2—DAVIS & FURBER 80 inch NAPPERS
McCREARY 4 roll STEAM CALENDER
3—Firsching SLITTING MACHINES
1—Ireland SLITTING MACHINE
1—Grand Rapids SLITTING MACHINE
1—Adams SLITTING MACHINE
4—PAYNE 40 sp. BOTTLE WINDERS

Geo. E. Smith Textile Machinery Co.

P. O. BOX 46 — COHOES, N. Y.

FOR SALE

30" LOOMS

76—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.

AMES BAG CO.

10 East 40th St. — New York, N. Y.

TEXTILE MACHINERY

USED OR REBUILT
Spinning—Weaving—Dyeing
Finishing—Hosiery Knitting
Specialists in Export Trade

S. B. SCHWARTZ

LIQUIDATIONS

Plum & Lowerline Street — New Orleans, 18, La.
Cable: Maquintex—Code Bentley's

THE DOOR WE WANT YOU TO BEAT A PATH TO!

(BAD GRAMMAR BUT A GREAT IDEA!)

WE DON'T make mousetraps or live in a forest . . . but we DO offer BUYERS a great line of textile equipment for immediate delivery—and can give you QUICK action too if you want to SELL. The door's always open and the ◀ Welcome ▶ on the mat means we'll take on any kind of tough machinery problems (Purchase or Sale). Don't knock—come right in for ◀ MLC ▶ Service!

Partial List of ◀ MLC ▶ Stock Items Ready For Immediate Delivery

(Two Good Reasons For Path-Beating)

2—46" Button Breakers
1—52" Button Breaker
1—42" Butterworth 3-Roll Friction and Rolling Calender, motor driven
1—Complete Set Combers including:
1—Whitin Ribbon Lapper
1—Whitin Sliver Lapper
8—Whitin Model "C" Combers
1—Rotary Cloth Cutter, 5" knife
1—46" Windle Doubler
1—36" Doubling & Winding Machine
5—Dblg., Boarding & Winding Machines
1—6 Delv. Whitin Drawing Frame with 12" coiler
1—66" Heathcote Cloth Dryer, wood housing, 17 yds. when loaded
1—28" Stick Klauder Weldon Skein Dyeing Machine
1—28" American Laundry belt driven extractor
1—40" American Tool underdriven Copper basket belt driven extractor
1—40" Elliott & Hall Folding Machines
4—42" Elliott & Hall Folding Machines
4—46" Elliott & Hall Folding Machines
1—Card grinder, no motor
1—4 delivery H & B drawing frame
1—6 delivery H & B drawing frame
8—1200 h. Halton Jacquards, 9" lift
58—38" Model E Draper Auto. Looms
120—40" Draper Modified "D" Looms for 20 harness work (double index dobbies) 45½" reed space, belt driven
60—42" Modified "E" Draper with roller tops, 47½" reed space, belt driven
19—44" Model D Modified Draper Auto. Looms
50—52" C & K 4 x 1 Auto Looms, 56½ R.S. 25 Har. Belt Driven
212—76" Draper Modified "D" Lacey top looms, 82" reed space, 100 belt driven; balance motor driven, ¾ H.P. motors
18—82" C & K 4 x 4 25 Harness motor driven woolen looms
2—82" C & K (4 x 4) 25 Harness Woolen Looms, belt driven
1—90" D. F. Single Acting 14 Roll Napper
1—66" Voelker Cloth Presses
1—60" C & M Plush Shear
3—66" C & M 2-Blade Shears
3—66" P & W 2-Blade Shears
1—72" Montsford 2-Blade Shear
1—Schultze 106" Double Shear
1—66½" P & W Model A 3-Blade Shear
1—42" C & M 5-B Singer
3—204 Sp. Lowell 2¼" Ring Band dr. Spinners
8—120 Spindle Draper Spoolers with Foster Tensions and McCall Guides
1—60" C & M Tiger
4—20 Spindle Universal #90 Filling Bobbin Winders, bottom supply
9—100 Spindle Foster #12 tube winders, belt driven
3—110 Spindle Hopedale 3" Ring Twisters
1—56 Spindle Draper 2½" Ring, 3½" Gge. Twister
1—Barber Coleman Auto. Warp Tying Mach., size 4-E.
1—44" Simplex Winding & Measuring Mach. Mtr. dr.
1—#90 Universal Winder
2—60" Edge Stenciling & Winding Machines
8—352 Spindle D&F 2½" gge. Mules, 1919-20
3—352 Spindle Platt Bros. 2½" gge. Mules
1—352 Spindle James Smith 2½" gge. Mule
2—Saco-Lowell Rag Pickers with feeds
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½" x 6" Wooden Spools
5—60" M. A. Furbush 2-Cylinder Card Sets including Bramwell Feeds, camelback intermediate feeds, rub condensors, and spool winders

MACHINERY LIQUIDATING COMPANY

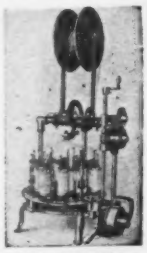
OPA REGISTRATION NUMBER 789

EST. 1923

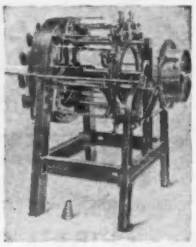
31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

DEALERS IN TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES



TWISTING • WINDING KNITTING • BRAIDING and ROPE MACHINERY

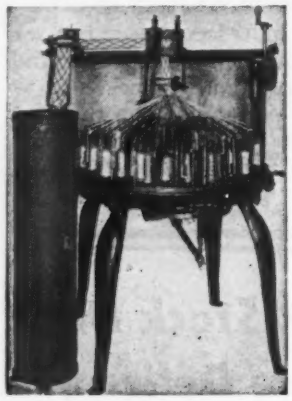


BRAIDING MACHINES

of all types for use in the manufacture of parachute cords, military cords, flat tapes, rugs, elastic tapes and braids, wire cords and braids, etc.

TWISTING MACHINES

in various makes, for hundreds of uses such as: cords, twines, rope, quimpe, wire, etc.



KNITTING MACHINES

for use in the manufacture of nettings, cloths of all types, rug materials, curtains, elastic girdle fabrics, hosiery webbing, shoe cloths, pocketbook materials.

WINDING MACHINES

of all types and makes for threading, winding and spooling. We have been handling above type of equipment for the past 20 years and solicit any and all inquiries for anything in textiles.

All above priced for quick sales. Quite a few knitting and braiding machines set up on our floors, where all machines are located. Machines in operating condition with material such as nets, rugs, dish cloths, cords, flat plain and fancy braids in them.

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70 Looms 1⅝"—3" Reed Space
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1—Continuous Cloth Dyeing Range, 5 Compartments, 5 Sets of Nips, all Rolls Rubber 50" Face, including Dye Padder.

1—Open Soaper, 5 Compartments 40" Deep, 50" Face Rubber Nip Rolls.

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345—Pr.—24" Allen, wood—5⅝" barrel.
86—Pr.—24" Pressed Steel—5 29/32" barrel.
150—Pr.—C. I. Section Hds.—20"-22"-24"-26"-27".

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140—Beams 40"—18" Heads.
50—Beams 82"—24" Wood Hds.—5⅝" barrel.
24—Section Beams—54".
125—Section Beams—66"—24" adj. Pressed Steel Hds.—5" Barrel.

Send lists of surplus equipment which you have for sale.

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18—Scott & Williams Circular Knitting Machines. 12 cut, 36 gauge, 8 feed with 16 end stop motion. Cylinders 15" to 20". Serial Nos. 14,000 - 16,000 A.

1—20" Scott & Williams Cuff machine

1—500 Gal. Permutit Water Softener

1—6" International Dry Pipe Valve

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Smith, Drum 9 Compartment rotary type Dyeing machine, monel metal, without motors or controls.

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SINGEING MACHINE

1—80" 2-Burner Singeing Machine.

PRINTING MACHINES

7—R. B. & F. 1-10 color Print Machines, 40-60" wide.
1—V.V. 10-colo.· Ribbon Printing Machine, complete with Back Grey Washer and Jack.

AGERS

2—Cast Iron Agers, 18' long x 50" & 60" wide.
1—Cast Iron Ager, 12' long x 66" wide.
1—Haveg Patch Ager.

KETTLES

20—Textile Copper Steam Jacketed Color Kettles, tilting type, agitated, 24 to 100 gallons capacity.

CAN DRYERS

450—Dry Cans, 50" to 108" face, 23" to 84" dia.

FULLING MILLS

1—James Hunter #10 Fulling Mill.
6—Rodney-Hunt Fulling Mills, gear drive.
2—Single Line Fulling Mills, rubber rolls.

OPEN WASHERS

1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
1—Complete Wash Unit, consisting of Grey Washer, Dry Cans, unrolling stand and motor.
1—6-compartment 30' Washer, 66" wide.

ROPE SOAPER

1—V.V. Continuous Square Formation Washer.

DYE BECKS

20—Butterworth, Morrison & V.V. 6' & 8' Dry Becks, stainless steel and wood tubs.

BLEACHING

8—Bleaching 4-5 ton Kiers, vomit type.
1—5-ton Kier, circulating type.
2—Lincoln 2-roll Rope Squeeze Rolls.

SCOURING & DYEING MACHINES

2—Haveg Dye. or Washing Machines, completely enclosed.
1—Sargent 3-Bowl Skein Scouring Machine.
10—Klauder-Weldon Skein Dyeing Machines.
1—Sargent 4-Bowl 48" Wool Scouring Washer.
1—Rodney Hunt 7-String Dyeing Machine.
1—Obermaier Combination Package & Rawstick Dyeing Machine.
1—Buhlmann 100 roller cap. 14-color adjustment skein dyeing machine.

DYE JIGGS

6—Dye Jiggs, 54" rubber covered rolls.
1—Battery 4-Morrison stainless steel lined Dye Jiggs, 50", tilting expanders.

EXTRACTORS

6—V.V. & Tolhurst 54" & 60" rubber & copper basket extractors.
8—V.V. Fletcher & Tolhurst 40", 44", 48" Extractors, copper lined.
10—Tolhurst, American Laundry, Adams, Troy & Bach Copper Lined Extractors, 14", 17", 20", 26", & 32".

CALENDERS

2—V.V. Ball Bearing Calenders, 50" & 60".
2—McCreary 50" & 54" Knit Goods Calenders.
1—Perkins 3-Roll Hydraulic Calenders.
1—Textile 3-Roll 80" Calenders.
1—Butterworth 2-Roll 54" Schreiner Calender.
1—Butterworth 3-Roll 54" Friction Calender.

SHEARS

1—P. & W. 3-Blade Shear, 60½" with lint saving device.
1—P. & W. Double Blade Shear, 66½".

DECATERS

1—Gessner Full Decating Machine, 72" wide.
3—Gessner & Yale Semi-Decating Machines 50", 62" & 72" wide.

SPECIAL OFFERINGS

1—P & S 4-Fan 30' Loop Dryer.
1—G.L. 3-Section Steel Rope-Washer.
1—Morrison 50" 19-Roll Heavy Duty Button Breaker.

DRYERS

3—National & P & S Loop Dryers, 30-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 48" automatic Feeder.
1—P & S 36' Loop Dryer, 90" poles, rebuilt by National. Equipped with high speed booster fans, airfins.
2—V.V. 5-Tier, 50" & 60" Net Dryers.
4—Sargent & Hunter Wool Carbonizing Dryers.
1—Single Truck Dryer.

NAPPERS

5—D & F & Woonsocket Nappers, 60-90".
1—Gessner 20-Roll 66" Double Acting Napper.
1—60" Box Napper.
1—Woonsocket 66" 24-Roll Double Acting Napper.

TENTER FRAMES

1—W & J 80' x 50" Swing Tenter Frame.
1—Heathcote Pin Tenter Frame.
1—25' Tenter, with Bakelite Clips.

PALMER QUETCH

3—Morrison & V.V. 50", 60" & 72" Palmer Quetch Units.
1—V.V. Palmer Quetch Unit, low type, 65" wide.

PADDERS, MANGLES, QUETCHES

3—Textile 50" 2-Roll Dye Padders.
4—Butterworth 50" 2-Roll Starch Mangles.
1—Textile 2-Roll 70" Padder.
5—Butterworth & Morrison 2 & 3-Roll Quetches, 50-72" wide.
5—Quetches, 2- & 3-Roll 36-72" wide.
1—James Hunter 50" Water Mangle.

STEAMING & FINISHING MACHINES

3—Steaming Machines for Tubular goods.
2—C & M Finishing Machines for Tubular Goods.

BUTTON BREAKERS

3—Morrison & V.V. Button Breakers, brass rolls, 50-72".

BEAMERS — BATCHERS

4—Van Vlaanderen 50" & 60" Beamers.
14—Batchers, 48"-72".

EXAMINING MACHINES

2—Examining Machines for tubular goods.

FLAT FOLDERS

4—Elliot & Hall Flat Folders, 42" to 60".

DOUBLERS

5—P & W & Windle 46"-66" Doubling, Reeling and Measuring Machines.

SEWING MACHINES

15—Merrow 60 ABB & 60D3B on tracks.
14—Merrow 60 ABB & 60D3B on portable stands.

PRESSES

1—Logemann All Steel Paper Baler.
2—Shick & Economy All Steel Presses.
3—Gessner 66" & 72" Wool Presses.

LOOMS

24—82" 4 x 1 Automatic Looms.
4—C & K 4 x 4, 80" Rayon Looms.
100—V & K 50" Rayon Looms.
94—Draper Model E 44" Automatic Looms.

COUNTERS

250—Waltham Pick Counters.

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1—Permutit Water Softener, 103" hg, 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
3—Pressure Sand Filters, 8" dia x 20' lg, complete with pipe and valves.

CARDING MACHINES

6—D & F Tatham Breaker Cards, 40" x 50".
2—D & F Finisher Cards, 48" x 50".
7—Whitin Breaker Cards, 48" x 50".

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4—Mangles 40" to 66".
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1—Napper, Knitgoods 72".
1—Padder, Heavy Duty 66".
1—Palmer 63" x 60" with Blanket.
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3—Quetches 42" to 60".
2—Sewing Machines, Rotary.
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1—Tenter frame, Pin 30' x 72".
2—Tenter Frames, Clamp 30' x 56" and 40' x 48".
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8—Intermediates, 9 x 4½ and 10 x 5.
16—Remodeled "E" Looms, 38".
27—Remodeled "D" Looms, 44".
10—Remodeled "P" Looms, 64".
40—C&K 72" Looms 4 x 1, 25 harness.
24—C&K 75" Looms, Convertible 20 harness.
8—C&K 76" Looms, 4 x 1, 25 harness.
20—C&K 92" Looms, 4 x 4 mtr. driven.
10—Mules, 1¾" Gauge, 480 spindle units.
1—Picker Mixing 36".
1—Picker Burr 36".
5—Slubbers, 12 x 6.
1—Roving Frame, Worsted, 36 Spindle.
8—Speeders, 8 x 4.
6—Twisters, 3½" Gauge, Double Roll.
35—Twisters, Upstroke Double Deck.
1—Warper 540 Ends, new 54" drum.
3—Winders, Lazenby for Automatic Bobbins.
3—Winders, #90 motor driven.
1—Baling Press 4'x3'x6' mtr. drive.
1—Calender 5 Bowl 47".
2—Calenders, Friction 43" & 56".
1—Calender Embossing 43½".
1—Doubler & Folder 90" roll.
1—Set 41 Copper Dry Cans 44".
2—Chinchilla Machines 60".
1—Cloth Conditioner 68".
1—P&W Decating Machine 72" width 12" dia. cyl.
1—Decatur—Semi 68 x 32.
1—Decatur Full 72".
2—Dryers, Loop Unit Heaters.
2—Dryers, Pin 60" & 80".
1—Dryer, Raw Stock 350-lb.
9—W&W Skein Dyeing Units.
3—Extractors 40" to 60".
2—Extractors, Raw Stock 48".
1—Grinder, Napper 110" Traverse.
2—Fulling Mills, Double Compartment.
1—Fulling mill, Sample type.

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20—Saco-Pettee Slubber Frames.
8—Whitin Slubber Frames.
25—Saco-Lowell and Whitin & Wonnsocket Intermediates.

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4—Whitin Twisters, 224 Spindles, 3¼" gauge, 2 ring.

RAYON TWISTERS

22—Upstroke Barmer Machinenfabrik Twisting machines.

LOOMS

100—Draper Model K 45" Looms, Belt Driven, 8" Bobbin.
118—4 x 1 C & K Automatic Looms, 48½".
20—4 x 1 C & K Hand Threading Looms, 43½".
190—1 Box Automatic Hopedale Plain Looms.
600—Draper Automatic Looms with Slashing Auxiliary equipment.
200—C & K 2 x 1 Looms.

DYE PADDER

1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll, Motor Driven.
1—Dye Padder 65", 2 Squeeze Rolls, 1 Steel and 1 Rubber-covered, 2 Copper Rolls, Wood Tank, Butterworth.

EMBOSSERS

1—Textile Two Roll Embossing Calender, 12" Face, One Roll Gas Heated, Pulley Driven, complete with Table and Winder.

EXTRACTORS

1—American 48" Open Top, Motor Driven Extractor, Copper Basket.
2—Hercules 63" Motor Driven Extractors, Copper Basket.

SPECIAL
ENGRAVING EQUIPMENT

7—John Hope 50" Pantograph Machines, Double Bar, #1381-1387
10—John Hope 48" Pantograph Machines, Double Bar, #1388-1397
1—John Hope 45" Pantograph Machines, Double Bar, #1398

TENTER FRAMES

1—30" Pin Tenter Frame with Motor and Reduction Box.
1—Van Vlaanderen 30' Tenter Frame, equipped with Stainless Steel, High Speed Spring Type Clips, Reeves Variable Speed Transmission, A. C. Motor.
1—Windsor & Jerauld 40' Tenter Frame equipped with Stainless Steel Tenter Clips, Reeves Variable Speed Transmission, A. C. Motor Drives.
Above 2 units are suitable for 50" goods.
1—30' Windsor & Jerauld Open Tenter Frame, with Steam Heating Coils.
1—60' Windsor & Jerauld Tenter Frame with Proctor & Schwartz Housing.

KNITTING AND SEWING MACHINES

All types of Wildman, Scott & Williams, Brinton, Supreme, Singer, Union Special, Merrow, Willcox & Gibbs and Metropolitan.

FINISHING CALENDERS

1—Butterworth 42" Hydraulic Schreiner 2 Bowl Calender, equipped with Cotton and Steel Engraved Rolls, Gas Heated Friction Unrolling and Batcher, Tension Rolls, complete with Accumulator and Pump, direct connected to General Electric 3 HP A.C. Motor, 50 Volts, 60 Cycle, 3 Phase, 900 RPM, Type M.T., with Drum Controller, Magnetic Switch and Grids.
1—Van Vlaanderen 3-Roll Finishing Calender, Wool Felt Bowls, Large Diameter.

FOLDERS

1—Eastwood Gray Goods Folder, 60" wide.
3—E & H Flat Folders, 45" to 60" wide.

KETTLES

8—Copper Steam Jacketed Mixing Kettles equipped with Double Motion Bronze Agitators, 70 to 350 Gallons Capacity.

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1—65" Van Vlaanderen Palmer Tenting Quetsch Unit, with Stainless Clips and Housing.

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One complete Full Fashioned Mill consisting of:
6—45 gauge 26 Section Leggers.
3—45 gauge 30 Section Footers.
3—45 gauge 24 Section Leggers.
1—45 gauge 24 Section Footer.

CAN DRYERS

1—Set of 20 Cans Textile Copper Cans, 23" diameter, 54" Face, Vertical Stack.
1—Set of 18 Cans, 23" x 45" Face, Vertical Stack.
1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.
1—Set of Textile Dry Cans, 15 Cans, 23" x 78".

DYE BECKS

1—Stainless Steel Lined Sample Dye Beck.
1—Van Vlaanderen 4' Stainless Steel Lined Dye Beck.
1—Van Vlaanderen 19' Cypress Dye Beck.

DECATORS

1—Parks & Woolson 72" Semi-Decator, with Blanket, Nash Vacuum Pump and Motor

DOUBLERS

2—Parks & Woolson 54" Doubling and Reeling machines.
1—Van Vlaanderen 60" Doubling and Winding machine.

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1—Werner 50" Single Color Print machine.
1—Rice, Barton & Fales 7 Color 50" Print machine.
2—Rice, Barton & Fales 42" Print machines, 8 and 11 Color.

PRINT MACHINE MOTORS

5—Print Machine Motors, 23 to 35 H.P.

SPECIAL

5—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber-covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive, with one DeLaval Worm Reduction Gear Unit, direct connected to Lincoln 10 H. P. A. C. Motor, 550 Volts, 60 Cycle, 3 Phase, 1200 RPM with Control.
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500—Butterworth Tenter Chain Clips, Type O-O Opening, Brass Faced Clips.

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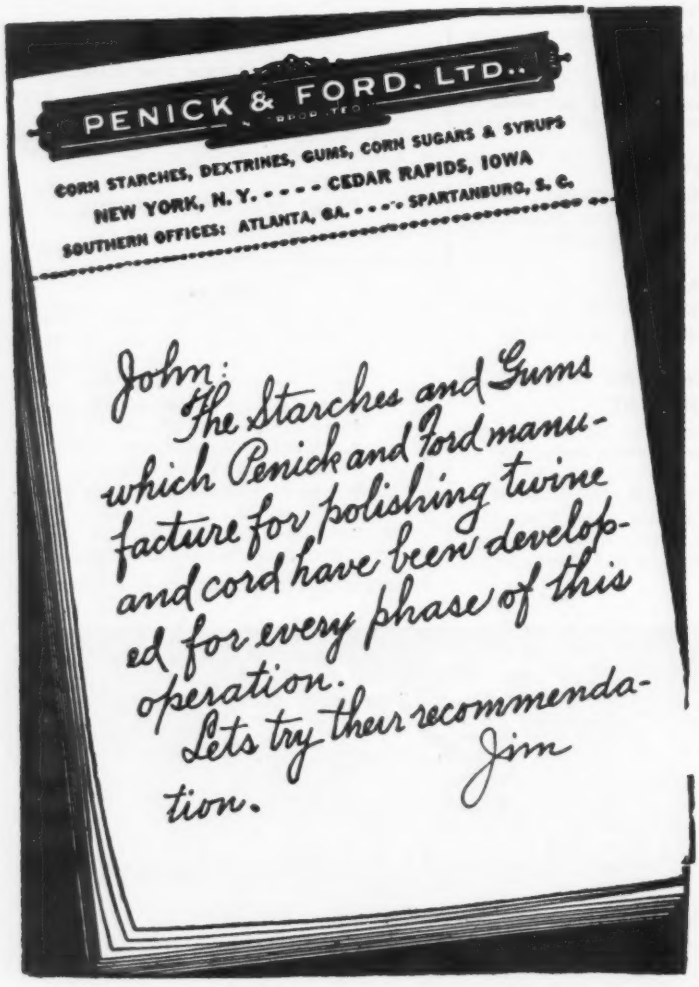
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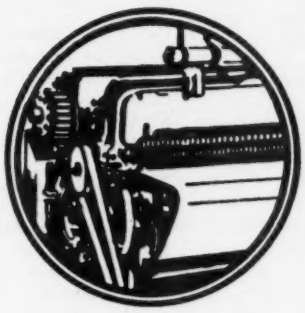

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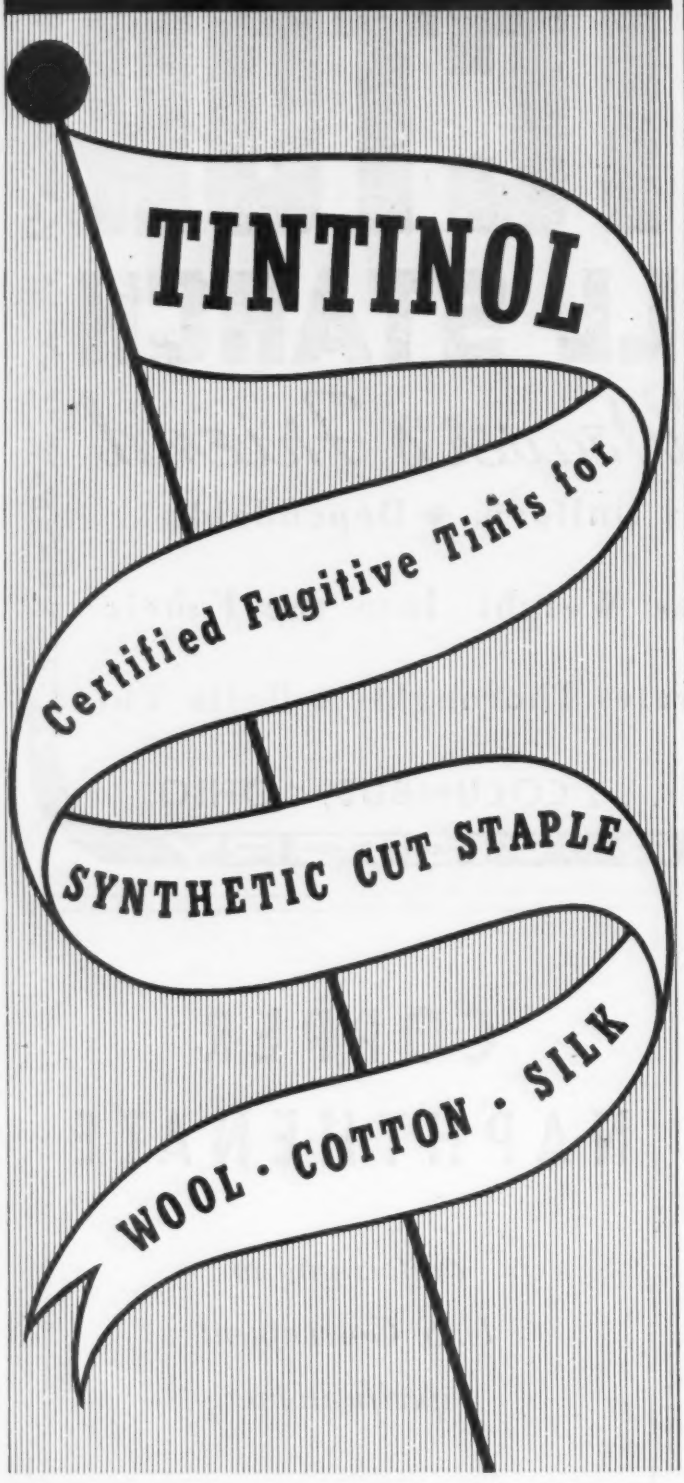

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